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THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

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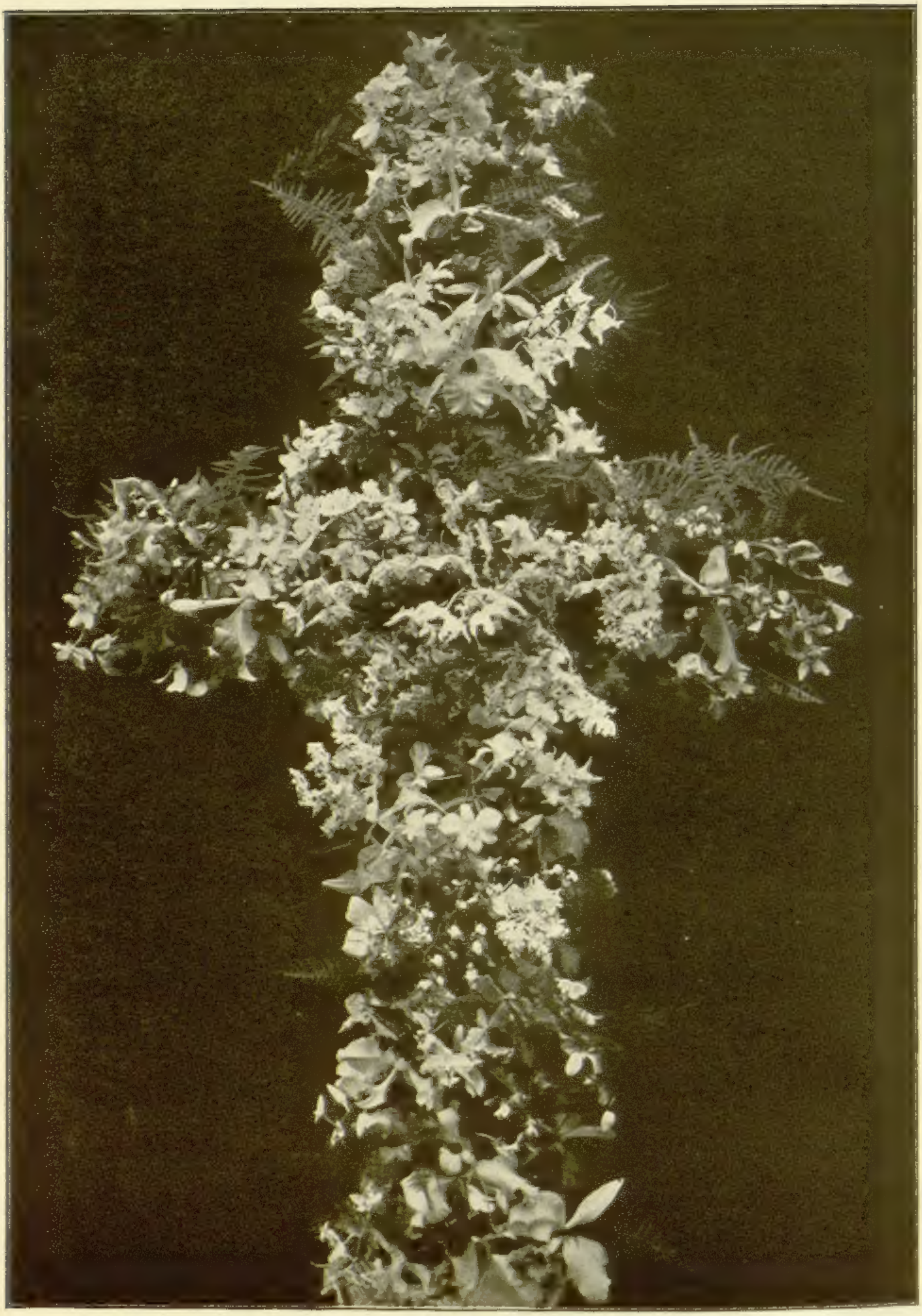

MANCHESTER ORCHID SOCIETY'S TRIBUTE TO THE LATE
G. W. LAW-SCHOFIELD.

(*See page* 375.)

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THE

ORCHID REVIEW

An Illustrated Monthly Journal

DEVOTED TO ORCHIDOLOGY

VOLUME XIV

1906

London:

MARSHALL BROTHERS, KESWICK HOUSE, PATERNOSTER ROW, E.C.

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Mo. Bot. Garden
1906

"He spoke of plants, diverse and strange,
That every hour their blossoms change,
Ten thousand lovely hues!
With budding, fading, faded flowers,
They stand, the wonder of the bowers,
From morn to evening dews."—

WORDSWORTH.

THE ORCHID REVIEW.

VOL. XIV.] *JANUARY*, 1906. [No. 157.

EVENTS OF 1905.

IT is customary at this season to glance at the principal events of the past year, and in matters orchidological the one event that stands out above all others is the re-discovery and re-introduction of what has been termed the lost Orchid, Paphiopedilum or Cypripedium Fairrieanum. The event came as a surprise. At the beginning of the year we were speaking of the plant as quite inaccessible, and even unknown to many Orchidists in a living state, but now it has flowered in numerous collections, and has become quite a familiar object, having been exhibited on several occasions.

EXHIBITIONS.

The fortnightly meetings of the Royal Horticultural and Manchester Orchid Societies have been quite up to the average in point of interest, while the Temple Show was again a great success. The great summer show was held at the Royal Military Hospital, Chelsea, instead of at Holland House, and brought together a remarkable display of Orchids. There was also a great Horticultural Exhibition at Bruges at the beginning of August, at which Orchids were very numerously represented, and a similar remark applies to the monthly meetings of the Royal Linnéene Society of Brussels, which have been recently instituted. And it may be added that scarcely a meeting is held without the appearance of some novelty, in most cases, however, from the hand of the hybridist.

NOVELTIES.

Novelties among introduced species have witnessed a slight increase during 1905. First and foremost may be mentioned the handsome Oncidium corynephorum, Lindl., a Peruvian species which has at last flowered in cultivation, in the collection of E. Ashworth, Esq. It was figured as the frontispiece to our last volume. Lissochilus Mahoni and L. Ugandæ are two handsome species from Uganda, which have flowered at Kew, and have been figured in the *Botanical Magazine*. Arachnanthe annamensis is a handsome species, introduced from Annam by Messrs. Sander and Sons, and flowered at the Royal Botanic Gardens, Glasnevin. Vanda Watsoni, Cymbidium erythrostylum, and Eria globifera have a

similar history. Cymbidium Sanderi is another handsome species from Annam, but we are not certain that it differs from the earlier C. insigne. There are also C. Schrœderi, and Eulophia paniculata, while Cypripedium tibeticum—a true Cypripedium, by the way—has flowered among Messrs. Veitch's Chinese introductions. These are the more striking among imported species, and we pass along to the

HYBRIDS.

These have, as usual, been numerous, and two of the most remarkable were Odontonia × Lairesseæ and Dialælia × Veitchii. The former was raised by M. A. de Lairesse, from Odontoglossum crispum and Miltonia Warscewiczii, and the latter by Messrs. Veitch, from Diacrium bicornutum and Lælia cinnabarina. Other interesting things are Brassocattleya × Peetersii, Promenæa × Crawshayana, Stanhopea × Wolteriana, Cattleya × Lawreglossa, C. × Appletoni and C. × Aurora, Lælio-cattleya × Alexandri, L.-c. × crispo-Hardyana, L.-c. × vivicans, and various others, including quite a number of

ODONTOGLOSSUMS.

The progress which is being made with this genus is remarkable. In the first place we may mention the way in which the Mexican and Colombian species have been united. First came O. × Lairessei, derived from O. Cervantesii roseum ♀ and O. Edwardii ♂, and figured at page 81 of our last volume, and a few months later came O. × Smithii, from O. Rossii rubescens ♀ and O. × Harryano-crispum ♂, figured at page 9 of the present issue. O. × Thompsonianum, derived from O. crispum and O. Edwardii is another very remarkable thing, which is figured at page 241 of our last volume. O. × Vuylstekeæ, figured at page 361, stands unrivalled for richness of colouring. O. × Fascinator, O. × Othello, and O. × Phœbe, all figured at page 201, are also handsome, while other novelties are seen in O. × Wiganianum, O. × blando-nobile, O. × Stella, O. × warnhamense, O. × Ossultoni and O. × formosum (figured at page 297). Besides these we have four remarkable seedling forms of O. crispum, all of which have been figured (pp. 48, 112, 145, 337). A last reference to Mr. Crawshay's fine house of seedlings, figured at page 177, will suffice to show how great is the progress made within the year.

CERTIFICATED ORCHIDS.

These are again very numerous, as is apparent on glancing through our reports. Over thirty First-class Certificates were issued by the R.H.S., the list including eight Cattleyas, seven Odontoglossums, five Cypripediums, with Cymbidium and Lælio-cattleya three each, the remainder being Calanthe × Chapmanii, Brassocattleya × nivalis, Zygopetalum × Ballii, Oncidium corynephorum, and Vanda Sanderiana Chillingham var. Awards of Merit have been very numerous, while several Cultural

Commendations have been given, and the Lindley Medal has been awarded on at least three occasions, showing that the cultural side of the question has been equally well to the fore. In fact progress has been written large over the year's doings.

LOSSES DURING THE YEAR.

The hand of death has removed from our midst Mr. H. G. Moon, the well-known artist, and Mr. John Bidgood, while almost as we write comes news of the decease of an old friend, in the person of Mr. F. W. Burbidge. The two latter were members of the R.H.S Scientific Committee.

The prospects for the coming year are particularly bright, and the scheme of exhibitions organised by the R.H.S., as reported in our October issue, should keep our favourites to the front from January to December. May the promise be fulfilled, and may our readers all have a share in the year's progress! Lastly, to one and all, we wish

"A HAPPY NEW YEAR."

ORCHIDS AT WILDERSPOOL, WARRINGTON.

It was recently my great pleasure to visit the Orchid houses of William Bolton, Esq., Mayor of Warrington. An intelligent observer could not fail to learn much in Orchid culture there, even if alone, but in the company of Mr. Bolton and his intelligent gardener, Mr. W. H. Cain, the visit became trebly interesting. Mr. Bolton has about thirty houses devoted solely to Orchids, varying from 40 to 75 feet long, and from 9 to 13 feet wide. The houses are entered from a long corridor running north and south, from which the different structures branch off at right and left angles. They are mostly one type, built low, with span roofs, and top light only. The floor is the natural soil, beaten and trodden quite firm, the stages are covered with coke breeze, and are very low, not above eighteen inches from the ground, which enables one to look right down on the plants, giving great facility for inspection, small watering tanks are placed at convenient distances for watering purposes.

The first thing to strike the eye on entering one of the houses was a magnificent batch of about 200 plants of Cypripedium insigne Sanderæ, nearly all in flower. Never before has it been my pleasure to see such a splendid sight, whilst under Mr. Bolton's system of cultivation, the quality and substance of the flowers were brought out to the highest perfection. One flower pointed out for my inspection was a real gem. It has been raised from C. i. Sanderæ fertilised with its own pollen, and not only was the flower finer both in form and substance, but a beautiful golden band, dividing the white from the green of the dorsal sepal, gave it an air of great distinction. At a modest computation there would be well over two

hundred flowers of C. i. Sanderœ open at once, and the picture was well worth a long journey to see. I believe Mr. Bolton holds the largest stock of this variety of anyone in the kingdom, his plants numbering well over four hundred growths, and all have been propagated from what were about twenty small plants three and a half years ago.

Mr. Bolton pointed out to me with pride (and very justly) a grand plant of C. Chamberlainianum, with leaves nearly half a yard long, and fully three and three quarter inches wide (measured)! It made one wonder if it were not some new Dracæna, but a well developed flower on a strong spike quickly dispelled all doubts. Here were also in flower C. i. Harefield Hall var. and Youngianum, both fine, C. i. Bohnhofianum, and most of the varieties of C. insigne, both yellow and spotted. In this house the visitor is surrounded by nearly all the aristocrats of the Cypripedium world, of which brief mention can only be made. I noticed about twenty plants of C. × Maudiæ, growing along with its parents, C. Lawrenceanum Hyeanum and C. callosum Sanderæ. C. × aureum Surprise was in fine health, as also were C. × Leeanum Clinkaberryanum, C. × L. giganteum, C. × L. superbum, C. Actæus, and C. × Prospero, while about fifty plants of C. × Euryades were making a brave show. Mr. Bolton possesses about forty plants of the re-discovered C. Fairrieanum, several of which have flowered, and one or two are already bearing promising seed pods.

Mr. Bolton feels sure this species will astonish Orchidists when it is better understood, say in a year or two, when fairly established with strong roots, and he certainly has several plants which are growing away most vigorously. I also noticed a big batch of C. Charlesworthii of very good form, having larger dorsal sepals and fine texture, while C. × Arthurianum and C. × Hitchinsiæ were making a fine show.

In another house were growing, like weeds, the difficult-to-do Miltonia Roezlii, and a thriving little lot of M. R. leucoglossa and M. Phalenopsis. Cattleyas of the labiata section are well represented here, by thousands of strong plants, particularly striking being a group of C. Dowiana aurea bearing over a score of beautiful flowers. These were only surpassed by a splendidly flowered houseful of C. labiata, consisting of about four hundred plants, and these, of various tints, being intermixed with fine spikes of Oncidium varicosum, mostly var. Rogersii, made up a delightful colour picture. Another house gave room for about a thousand plants of the C. gigas and C. Dowiana aurea section, mostly unflowered, while overhead hung a robust looking lot of Dendrobium atroviolaceum, and about a score of D. nobile album.

In another house the visitor could not help being struck by the sight of a splendid batch of Miltonia vexillaria, in all about five hundred plants. These were just being repotted at the time of my visit, from four inch into

five and six inch pots. The new growths and roots were really fine, and promised a big blaze of bloom in their due season. I also noticed a healthy lot of about one hundred plants of the beautiful but rare Oncidium olivaceum, many of which were carrying good spikes of reddish brown and purple flowers. A recently imported lot of Cattleya Mendelii were pointed out to me as having already bloomed many valuable varieties.

But Odontoglossums form the chief feature of Mr. Bolton's collection, and of these he grows about seventy thousand, most of the good varieties being well represented, and here, like most other collections where these Odontoglossum gems are grown, they are rarely allowed to flower, being divided and propagated for all they are worth. For instance O. crispum Lindeni a single plant eighteen months ago, is now three fine plants. The Odontos. generally are splendidly grown, and make big fine bulbs, which carry spikes of from fifteen to twenty flowers, and often more.

And now a few words as to the cultural methods by which such satisfactory results are attained. I think that these will come as a rude shock to the anti-leafmouldist, anti-syringist, and the advocate of top ventilation. The basis of the compost all through the establishment is decayed leaves and chopped sphagnum moss. Mr. Bolton assured me he had not used an ounce of peat for his Orchids during this last seven years! and when you glance through the gamut of plants cultivated at Wilderspool, the statement seems scarcely credible. Yet so it is, but this mixture is slightly varied for the different genera. For Cypripediums, Cymbidiums, etc., he adds to the leaf mould and moss a good sprinkling of marly loam, which he procures locally, and some finely broken crocks and sand, and in this they revel. Mr. Bolton also finds that most of the Miltonias, particularly M. vexillaria, thrive much better with the addition of this loam. Cattleyas, Odontoglossums, Oncidiums, &c., are put in leaves and moss in about equal proportions, with a good sprinkling of sand. A fine batch of Phalenopsis amabilis Rimestadtiana and O. Schilleriana were growing finely in this, and sending up strong flower spikes. These were down on the stages, potted in ordinary pots.

So much for the anti-leafmouldist, and now for the anti-syringist. I may safely say that, for all practical purposes, syringing is the only method of watering adopted throughout the establishment, and this, as Mr. Cain says, is done whenever they require watering, foliage and flowers, and everything, receiving their due share, and he has never yet seen any harmful results. This treatment keeps the compost in that nice moist (not wet) condition, which is undoubtedly the secret of success with this leaf and moss compost.

The houses, too, are constructed without top ventilation, but at the ends several panes of glass are made to open and shut, and these, when the

outside conditions are favourable, are left open, and thus there is a free current of air running from end to end of the structure. Several fine plants of Oncidium macranthum placed just underneath one of these openings seemed to enjoy having their leaves blown about, and this in the month of November.

Mr. Bolton, who has been growing Orchids about twenty years, takes an active interest in his plants, and may be seen on most mornings, along with his intelligent gardener, Mr. Cain, working at his plants, or potting up some special variety.

Everything about the place gives one the impression that here are practised no fads. All is of the simplest construction, and designed for efficiency and economy, both in money and labour. And the result is eminently satisfactory.

H. THORP.

NOTES ON SOME MEXICAN ORCHIDS.

IN a recent number of the *Orchid Review* I observe a figure of Chysis bractescens cultivated in a pot and growing in an upright position. It may interest some of the readers of this journal to know that in a state of nature it never grows in such a manner, but always pendant, the pseudo-bulbs upside down, and each year's growth from the dormant eyes continuing downwards. It occurs generally in damp, shady forests, usually on the trunks of the trees, rarely on the branches, and frequently within ten or fifteen feet of the ground, differing in this respect from most epiphytic Orchids, which delight in airy positions in the topmost branches or forks of the trunks of the larger forest trees.

In this latitude, 17° N., it ranges from almost sea level in damp forests to 2,000 feet, after which it is replaced by C. aurea to 5,000 feet, apparently the zonal limits of the latter, whose habit of growth is precisely like C. bractescens, the roots of both species running up and down several feet on the trunks of the trees they grow on, not spreading to any extent laterally, from which characteristics we might infer that the pot system of culture is hardly rational.

C. bractescens is subjected to considerable drought and high temperatures during the resting reason, which here is from February 1st to the early part of May, the flowering occurring in March and April synchronously with the starting of the new growth, which latter progresses very slowly until the coming of the rains towards the end of May. During the months indicated the thermometer oscillates between 75 and 95 F. in the shade during the greater part of the day, and from 70 to 80° at night, with very little rain, though doubtless there is always an appreciable humidity in the forest shades.

From June to November the rains are frequent and copious, though there is plenty of sunshine at intervals, and a breezy air, from November on until February, much cloudiness and mists, the extremes of temperature ranging from 58° to 80° F, though for most of this period from 65° to 75°: and during the rainy season the range is from 75° to 85°.

Other Orchids of the district comprise Epidendrum cochleatum, E. Stamfordianum, E. myrianthum, E. ciliatum, E. atropurpureum, two fine species of Stanhopea—distinct from our Sierra plants, S. tigrina and S. oculata—Oncidium luridum, O. altissimum, O. Cebolleta, Cycnoches ventricosum, Brassavola glauca, Schomburgkia tibicinis, Coryanthes sp., Mormodes sp., and an epiphytic Sobralia with similarly coloured but smaller flowers than S. macrantha, which latter occurs at not lower than 4,000 feet, and always semi-terrestrial.

Schomburgkia is never found here in tall, damp forests, but always in more or less open country, and often sadly sunburnt but very floriferous. The Stanhopeas and Epidendrum cochleatum occur in shady places, and the others generally in more airy situations, and exposed to partial sunlight. Besides those enumerated, there are many others, few of which are of other than botanical interest.

Cycnoches, Catasetums, and Mormodes almost invariably grow either in rotten stumps or the decayed portions of live trees, very rarely in live bark, and, so far as I have observed, are the only Orchids of the district affecting this preference.

The symbiotic relation between the roots of different Orchids, and the bark of the trees in which they grow forms a most interesting study, and the effort to collect from the forest and establish the plants in our garden trees becomes at times a problem. On certain trees the plants languish for no apparent reason, in others the results are most gratifying.

An exfoliating cortex is obviously unsuitable; hypothetically, a rough bark would promise the greater measure of success, and often so results, yet many Orchids taken from trees with a bark of this character find a happy home in the comparatively smooth bark of young Mango trees, and I have observed Schomburgkia tibicinis growing on the very smooth trunks of Oreodoxa regia, the royal palm, though more commonly in the rough bark of a species of Quercus, found in open, gravelly country, near the coast as well as inland.

Of the many Orchids I have collected in the Sierras, from 4,000 to 6,000 feet, few succeed at this low elevation. Oncidium Cavendishianum, however, does fairly well, also O. ornithorhynchum and Trichopilia tortilis.

J. C. HARVEY.

Santa Lucrecia, Mexico.

OBITUARY.

F. W. BURBIDGE.—It is with profound regret that we have to announce the death of Mr. F. W. Burbidge, M.A., V.M.H., the highly esteemed curator of the Trinity College Botanical Gardens, Dublin, who passed away in his sleep on Sunday morning, December 24th, in his fifty-ninth year. For some time Mr. Burbidge has suffered from an affection of the heart, but the end came with unexpected suddenness. He was born at Wymeswold, Leicestershire, on March 24th, 1847, and educated in the village school. After some experience in private gardens he went successively to Chiswick and Kew, leaving the latter in March, 1870, to join the staff of *The Garden*. In 1878 he went to Borneo and Sulu, as collector for Messrs. James Veitch & Sons, and introduced numerous fine plants, including the popular Cypripedium Lawrenceanum and Phalænopsis Mariæ. The account of his travels is recorded in a very entertaining work, entitled *The Gardens of the Sun*. On his return in 1879 he was appointed Curator of the Trinity College Botanical Gardens, and in 1889 he was made an honorary M.A. He will be greatly missed, but his name will be perpetuated in the graceful Burbidgea nitida, discovered by him, also Dendrobium Burbidgei, Aërides Burbidgei, Cypripedium Burbidgei, and Masdevallia Burbidgeana. His wife, to whom he dedicated the beautiful Phalænopsis Mariæ, died only a few months earlier.

LIPARIS LŒSELII IN GLAMORGANSHIRE.

THE discovery of the rare Liparis Lœselii in a new British locality is a very interesting circumstance, which has just been recorded by Mr. H. J. Riddelsdell in a note from which the following is an extract:—"The locality in which it occurs was quite dry at the time of discovery; in winter it is no doubt wet, but never impassably wet. . . . There is a good quantity, many hundreds of plants in fact, healthy, and in excellent fruit, covering perhaps an acre of ground. The nature of the locality is to some extent indicated by the association with Liparis of such plants as Epipactis palustris, Orchis latifolia, and some O. incarnata, Scutelaria galericulata, Hydrocotyle, and Anagallis tenella. Botanists will require no apology for reserve in indication of the locality. There is no danger of the plant being disturbed or exterminated by natural means. The previously known distribution of Liparis in Great Britain included only five counties, Norfolk and Suffolk, Cambridge, Hunts, and Kent. It may have been found in Lincolnshire. The occurrence here is a remarkable extension of range." —*Journ. of Bot.*, 1905, p. 274.

ODONTOGLOSSUM × SMITHII

THE annexed figure represents the remarkable Odontoglossum × Smithii (O. Rossii rubescens ♀ × crispo-Harryanum ♂), for which Messrs. Charlesworth & Co. received a First-class Certificate at the R.H.S. meeting held on December 5th last. It represents the first successful attempt to unite the Mexican Odontoglossum with the species of the crispum group, though not with the Colombian species, for O. Cervantesii and O. Edwardii have already been combined (See O. × Lairessei, figured at page

Fig. 1. ODONTOGLOSSUM × SMITHII.

81 of our last volume). The photograph here reproduced was taken by Mr. G. I'Anson, and kindly forwarded by Messrs. Charlesworth, together with a flower. It is a very striking hybrid, and quite unique in colour. The plant is most like the pollen parent in habit, and at its first time of flowering produced a spike of three flowers. As regards shape little need be said, but the colour is remarkable, and presents a much stronger contrast than would be supposed from the photograph. The sepals are

light green, margined in the upper halves with violet purple, and the blotches are blackish brown. The ground colour of the petals is rather lighter, and the violet-purple margin is broader and extends round to the base. The front lobe of the lip is violet-purple, and the disc and crest yellow, with some blackish spots chiefly on the lower half. The crest consists of about five acute central teeth with a few smaller lateral ones, thus retaining some of the character of O. Harryanum. The column is most like O. Rossii, and the wings broad and nearly entire. The lip and margin of the sepals and petals are much darker than shown in the photograph, owing to the well-known actinic property of this colour. It is a very distinct and striking hybrid, and quite unique in colour and markings, and Messrs. Charlesworth must be congratulated on raising such an acquisition. It is dedicated to Mr. Smith, Messrs. Charlesworth's foreman.

SOCIETIES.

ROYAL HORTICULTURAL.

ORCHIDS were well represented at a meeting held at the Royal Horticultural Hall, Vincent Square, Westminster, on December 5th, when the awards consisted of one Gold and three other Medals, three First-class Certificates, two Cultural Commendations, and one Award of Merit.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), staged a remarkably fine group, to which a Gold Medal was awarded. It contained a fine lot of Odontoglossums, the more noteworthy being the handsome O. crispum Princess Christian, a handsomely blotched form with white ground which is suspected may be a form of O. × Denisonæ, O. × Ruckerianum insigne, which has been in the collection for about twenty years, the violet purple O. ioplocon, an ally of O. Edwardii, and very rarely seen, O. bictoniense album, Lycaste × Balliæ, Oncidium ornithorhynchum album, bearing several graceful panicles of flowers, Lælio-cattleya × bletchleyensis Ruby King, a large and very richly coloured form, and various others of the Cattleya group, as well as a fine series of Cypripedes, including some fine specimens. Of these the more remarkable were a fine C. × Leeanum with forty flowers, C. × Charles Canham with about two dozen, C. × Pitcherianum with over twenty, and several others were not far behind, including C. insigne Sanderæ, C. i. Harefield Hall var., and C. × Leeanum giganteum. The handsome C. × Baron Schroder, C. × Rolfei, and C. × Gravesiæ were also noteworthy.

The Right Hon. the Earl of Tankerville, Chillingham Castle, Northumberland (gr. Mr. Hunter), exhibited Vanda Sanderiana Chillingham var., a fine richly-coloured form, which gained both a First-class

Certificate and a Cultural Commendation. The plant was dwarf and compact, with three growths, and five spikes, bearing an aggregate of thirty-six flowers.

Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), received a First-class Certificate for Lælio-cattleya × epicasta Gatton Park var. (C. Warscewiczii × Lælia pumila præstans), a very large white flower flushed with delicate pink, and the lip sulphur yellow at the base, with a broad crimson-purple front lobe. He also sent L.-c. × Cornelia and several cut Orchids.

G. F Moore, Esq., Bourton-on-the-Water (gr. Mr. Page), received an Award of Merit for Cypripedium × Actæus var. F. H. Cann (insigne magnificum × Leeanum giganteum), a large and handsome greenish form, with the upper half of the dorsal sepal white.

Mrs. Haywood, Woodhatch, Reigate (gr. Mr. Salter), sent Cypripedium × Lady Tripp (× Harrisianum superbum × Euryades), a very dark rose-purple flower.

Sir William Marriott, Bart., Down House, Blandford (gr. Mr. Denny), sent flowers of Sophrolælia × Marriottiana aurea, Cattleya × armain-villierensis, and C. labiata.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent a good plant of Cypripedium insigne Sanderianum with six flowers, C. × Juno magnificum, C. × Prospero Sedeni, C. × Leeanum Mrs. Francis Wellesley, having a densely dotted dorsal sepal, C. insigne Mrs. F. W. Moore, and C. i. Hopkinsianum.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a choice group, to which a Silver Flora Medal was given. It contained a finely-flowered Trichopilia suavis, the pretty little Promenæa lentiginosa, Cœlogyne sulphurea, the yellow Lælio-cattleya × Lydia (L. Cowani × C. Gaskelliana alba), Cypripedium insigne Harefield Hall var., C. × Rosita (Charles-worthii × callosum), a pretty light rose-purple flower, a good form of C. × Hitchinsiæ, C. × Gravesiæ, C. × Leeanum giganteum, and various other Cypripedes; also various Odontoglossums, the most remarkable of which was the new O. × Smithii (Rossii rubescens × Harryano-crispum), to which a First-class Certificate was given. It is described and figured on page 9.

Messrs. James Cypher & Sons, Cheltenham, staged a particularly fine group, which gained a Silver-gilt Flora Medal. It consisted chiefly of fine Cypripediums, the centre piece being a noble specimen of C. × Leeanum giganteum, bearing fifty-six flowers, to which a Cultural Commendation was awarded. C. × Leeanum and C. insigne were very strongly represented, the latter including varieties Sanderæ, Sanderianum, and other yellow forms, also C. i. giganteum, and five plants of the fine

Harefield Hall var., C. × Charlesianum Cypher's var. (× Leeanum magnificum × Sallieri Hyeanum) a beautiful yellow-tinted flower, with the upper half of the dorsal sepal white, and the lower half blotched with brown. Other noteworthy things were C. × Fascinator, C. × triumphans, C. × Tityns, C. × memoria Moensii, Dendrobium aqueum, &c.

Messrs. James Veitch & Sons, Chelsea, showed Brassolælia × Rolfei (L. crispa × B. Digbyana), blush white with an elongated fringed lip.

AT the last meeting of the year, held on December 19th, there was a very fine show of Orchids, Cypripedes largely predominating, and the awards comprised one Gold and seven other Medals, one First-class Certificate, six Awards of Merit, and one Cultural Commendation.

F. Menteth Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), staged a remarkable group on the end staging of the Hall, with a frontage of fifty feet, the excellence of the exhibit being recognised by the award of a Gold Medal. Cypripedium insigne was represented by nearly five hundred flowers, and numerous varieties, the centre being occupied by about one hundred flowers of C. i. Sanderæ. There were also good examples of C. × Maudiæ, C. × Venus, and other hybrids, some good Phalænopsis, Lycaste × hybrida, fine examples of Masdevallia tovarensis, and varieties of Lælia anceps, with well-flowered Oncidium varicosum at the back, &c., the whole being very tastefully arranged with foliage plants.

Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), staged a brilliant group, which gained a Silver-gilt Flora Medal. The group contained many remarkably well-grown Calanthes, over two hundred spikes being present, including C. × Veitchii and its variety alba, C. × bella, C. × Bryan, C. × Wm. Murray, &c., numerous forms of Lælia anceps from the darkest to the true L. a. alba, L. Gouldiana, L. autumnalis and L. a. alba, Masdevallia cucullata with nine flowers, Dendrobiums, some good Sophronitis grandiflora, a good selection of Cypripediums, &c.

G. F. Moore, Esq., Bourton-on-the-Water (gr. Mr. Page), also received a Silver-gilt Flora Medal for a fine group of well-grown Cypripedes, including some good C. × Leeanum and C. insigne, the handsome C. × Beeckmanii, C. × Nandii, some fine examples of C. × aureum virginale and other forms of the hybrid, C. × Niobe, C. × Mrs. Tautz, some good C. × nitens, C. × Chapmanii, the pretty C. × Blanche Moore, C. × Amy Moore, forms of C. × Minos, &c.

The Hon. Walter Rothschild, Tring Park (gr. Mr. Dye), staged a group of interesting rarities, which gained a Silver Banksian Medal. It contained a well-bloomed plant of Pleurothallis Roezlii, P. Scapha, P. pernambucensis, Restrepia aspasicensia, the rare Angræcum Leonis, Masdevallia tovarensis, M. macrura, M. Reichenbachiana, M. striatella,

M. platyglossa, M. cupularis, M. Mooreana, M. triangularis, M. simula, M. bella, the rare M. trinema, &c.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent a few choice Cypripediums, including C. × Hera exquisitum, with a beautifully spotted dorsal sepal, C. × Mrs. de Vere Beauclerk (ciliolare × Fairrieanum), a delicately tinted flower, allied to C. × vexillarium, and C. × Thalia Mrs. Francis Wellesley, the latter a very richly coloured flower of excellent shape, to which a First-class Certificate was awarded.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Chapman), sent Cypripedium × Sanderæ No. 2, brighter yellow than the form previously shown, C. insigne Sanderæ, and C. × Leeanum Clinkaberryanum, with twelve very fine flowers, a Cultural Commendation being awarded to the latter.

D. O. Drewett, Esq., Riding-Mill-on-Tyne (gr. Mr. Renwick), sent a few interesting Cypripediums, Awards of Merit being given to C. insigne var. Aberdeen, a large form with very dark blotches on the dorsal sepal, and C. × Mary Lee, Drewett's var. (Arthurianum × Leeanum), the latter having the upper half of the dorsal sepal, white lined with purple dots. He also sent C. villosum auriferum, C. × Ruby, C. × villma (× Norma × villosum), C. × Actæus var. Viola Lee (insigne × Leeanum), and C. × John Heale (Druryi × Youngianum superbum), a pretty ivory white flower, tinged with green and spotted and marked with reddish purple.

Major G. L. Holford, C.I.E., Westonbirt (gr. Mr. Alexander), sent Lælio-cattleya × Clive variety delicata, having blush white sepals and petals, and a rich purple lip, and L.-c. × C. Westonbirt var., the latter a noble flower, measuring 6½ inches across the very broad petals, to which an Award of Merit was given. The colour is bright rose, with the front lobe of the lip crimson, and some orange veining in the throat.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), sent the pretty white Schomburgkia chionodora, and its purple variety Kimballiana, the former receiving an Award of Merit.

Baron Sir H. Schroder, The Dell, Egham (gr. Mr. Ballantine), sent Odontoglossum × loochristiense, O. × orphanum, and O. × Wilckeanum Schrœderianum, the latter a large pale yellow flower, heavily blotched with red brown, which gained an Award of Merit.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), showed the handsome Lycaste Skinneri armeniaca, and three fine plants of Odontoglossum × crispo-Harryanum, one having a branched spike.

Mrs. Holland, Wonham, Bampton (gr. Mr. Stacey), sent several interesting hybrid Cypripedes.

C. D. Phillips, Esq., Newport, Mon., sent the interesting Guatemalan Lycaste lasioglossa.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent Gomesa Barkeri and the South African Disa pulchra.

Messrs. Sander & Sons, St Albans, staged a choice group, which gained a Silver Flora Medal. It contains good examples of Cœlogyne fuscescens, C. Massangeana, and other species, the remarkable Bonatea speciosa, Cymbidium elegans and C. longifolium, Cypripedium × St. Albans, (C. × Antigone × Harrisianum), a richly coloured hybrid, C. × aureum, C. × Fairrieano-Io, with feathered rosy lines on the dorsal sepal, C. × Niobe Shorthills var., &c. An Award of Merit was given to C. × tessellatum rubens (concolor × barbatum), having the flower of an almost uniform ruby purple.

Messrs. James Cypher & Sons, Cheltenham, also received a Silver Flora Medal for a fine group, in which some good Cypripediums were effectively combined with Odontoglossums and other plants. Among noteworthy forms were some good varieties of C. × Leeanum and C. insigne, yellow and spotted, C. × Tityus, C. × Alcibiades, the handsome C Charlesworthii, Cypher's var., C. × triumphans, C. × Euryades and var. viride, the handsome C. × nitens Arle Court var., &c.

Messrs. Charlesworth & Co., Heaton, Bradford, received a Silver Banksian Medal for a pretty group, containing the handsome Trichopilia suavis, Lælia × Lydia, Lælio-cattleya × Alcyone, Cypripedium × Actæus magnificum, C. × Gravesiæ, C. × Cardosoanum, some good C. × Leeanum forms, &c.

Messrs. Hugh Low & Co., Enfield, also received a Banksian Medal for a pretty group, containing some good forms of Cypripedium × Leeanum, C. × Euryades, C. insigne, &c., yellow varieties of the latter being prominent, and among them the handsome variety Mrs. F. W. Moore.

M. Ch. Vuylsteke, Loochristi, Ghent, sent a few good Odontoglossums, including two fine forms of O. × ardentissimum and O. × Wilckeanum.

Messrs. Heath & Sons, Cheltenham, sent some good varieties of Cypripedium × Leeanum.

At this meeting, the *Gardeners' Chronicle* reports (p. 417), in consequence of the remarks of a correspondent as to the identity of Cymbidium × Maggie Fowler and C. × Gammieanum, the Orchid Committee had before them the plate of C. × Gammieanum, from King and Pantling's *Orchids of the Sikkim Himalaya*, and the drawing of C. × Maggie Fowler, together with other material considered before, and they unanimously agreed that there was no reason for considering the two plants as identical, and therefore the Award of Merit given to C. × Maggie Fowler must be sustained. The plant, it is said, was obtained from Messrs. Charlesworth. Thus the Committee are of opinion that C. × Maggie Fowler is a natural hybrid between C. elegans and C. giganteum.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Corn Exchange, Manchester, on November 23rd, when there was a fine display of Orchids, the awards consisting of five medals, two First-class Certificates, and three Awards of Merit.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), staged a choice group of well-grown Cypripediums, to which a Silver-gilt Medal was given. A First-class Certificate was given to C. × Euryades var. splendens, and Awards of Merit to C. × Bookeri, and C. × Leeanum New Hall Hey var.

J. H. Craven, Esq., Keighley, Yorks (gr. Mr. Corney), also received a Silver-gilt Medal for a fine group, including several good plants of the brilliant Epidendrum vitellinum.

W. Laverton, Esq., Nantwich, Cheshire (gr. Mr. Smith), received a Bronze Medal for a group of a dozen interesting Cypripedes, including a good C. × Lathamianum, a yellow form of C. insigne, and C. × Actæus Redcliffe var., the latter receiving an Award of Merit.

Messrs. William Bull & Sons, Chelsea, received a First-class Certificate for Sophrocattleya × Doris, a handsome hybrid from Sophronitis grandiflora and Cattleya Dowiana aurea.

Messrs. James Cypher & Sons, Cheltenham, staged a very fine group, to which a Silver Medal was given. It contained many good Cypripediums, specially noteworthy being a fine C. insigne Harefield Hall var., C. i. Luciani, several good forms of C. × Leeanum, C. × Fascinator, &c.; also the beautiful Miltonia vexillaria var. Leopoldi.

Messrs. A. J. Keeling and Sons, Bradford, received a Bronze Medal for a good miscellaneous group.

Messrs. Charlesworth and Co., Heaton, Bradford, sent a form of Odontoglossum crispum having beautifully spotted flowers.

THE meeting held on December 7th was one of the most successful the Society has ever held, and a remarkable display of plants was on view. The awards included two Gold Medals, and six First-class Certificates.

A magnificent group was staged by G. F. Moore, Esq., Bourton-on-the Water (gr. Mr. Page), which had required two pantechnicon vans to convey it to Manchester. The group had a frontage of about sixty feet, and was very tastefully arranged, with palms at the back and a few bright Codiæums. A Gold Medal and a Special Vote of Thanks were awarded. The forms of Cypripedium insigne were remarkable, and included dozens of named varieties in fine condition. Other species and hybrids were also well represented, and the group was brightened up with some good Oncidium varicosum Rogersii and Dendrobium Phalænopsis. First-class Certificates were given to C. × F. H. Cann (insigne magnificum × Leeanum

magnificum, and C. insigne sylhetense giganteum, and Awards of Merit to C. i. Kathleen Corser and C. × Blanche Moore.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), staged a fine group, which gained a Silver Medal, the more noteworthy plants being several good forms of Odontoglossum crispum, and half-a-dozen plants of Cypripedium insigne Harefield Hall var. First-class Certificates were given to C. × Thalia giganteum and C. × Mary Beatrice, and an Award of Merit to C. × aureum var. Purity.

R. Ashworth, Esq., Newchurch (gr. Mr. Pidsley) staged a beautiful group of Odontoglossums, to which a Silver Medal was given.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Smith), received Awards of Merit for Cypripedium × Arthurianum Leemann's var., C. insigne var., Leo, and C. × Standard.

S. Gratrix, Esq., Whalley Grange (gr. Mr. Cypher), received Awards of Merit for Cypripedium × westpointense (callosum Sanderæ × bellatulum album), and C. × F. Sander.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), received an Award of Merit for Cypripedium × Tityus Schofield's var.

S. Briggs-Bury, Esq., Accrington, and Walter Laverton, Esq., Nantwich, also sent some interesting exhibits.

Messrs. Charlesworth and Co., Heaton, Bradford, sent Odontoglossum × Smithii (Rossii rubescens × Harryano-crispum), a remarkable hybrid, to which the Committee awarded a First-class Certificate and a Gold Medal, in appreciation of such a successful attempt to unite the Mexican and Columbian Odontoglossums (See page 9 for a portrait). They also showed a good miscellaneous group, which gained a Silver Medal.

Messrs. James Cypher and Sons, Cheltenham, also received a Silver Medal for a fine group, consisting largely of Cypripediums, in which yellow and other forms of C. insigne, also the fine Harefield Hall var., were conspicuous. A Silver Medal was also awarded to a noble specimen of C. × Leeanum giganteum, bearing over fifty flowers.

M. Ch. Vuylsteke, Ghent, received a First-class Certificate for Odontoglossum × Wilckeanum var. Rex, a noble form.

Messrs. Sander and Sons, St. Albans, sent a pretty group of hybrid Cypripediums, including some good forms of C. × Hitchinsiæ, a Vote of Thanks being accorded.

Mr. D. McLeod, Chorlton-cum-Hardy, also received a Vote of Thanks for a small group of Cypripediums, in which C. × Morganiæ, a fine C. × nitens, and some yellow forms of C. insigne were conspicuous.

A few other interesting exhibits were sent by Messrs. A. J. Keeling and Sons, Bradford, Mr. J. Robson, Altrincham, and Mr. H. H. Clegg, Prestwich.

PAPHIOPEDILUM APPLETONIANUM & P. BULLENIANUM.

Two closely allied species are represented in the annexed illustration, namely the Siamese Paphiopedilum Appletonianum and the Bornean P. Bullenianum, and their characters and distribution form a very interesting if puzzling problem. We may consider them in the order of their appearance.

P. BULLENIANUM (fig. 3) was originally introduced from Borneo, by Messrs. Hugh Low and Co., and was described by Reichenbach in 1865, under the name of Cypripedium Bullenianum, in honour of Mr. Bullen,

Fig. 2. P. APPLETONIANUM. Fig. 3. P. BULLENIANUM.

then foreman at Upper Clapton. Mr. Day, who made a painting in February, 1865 (*Coll. Draw.*, ix., t. 35), added the information that it was imported with C. Hookeræ, and afterwards he remarked that he saw a hundred flowers at Messrs. Low's in February, 1867, adding:—"Mr. Bullen is indignant at his name being given to so unattractive a species." A second painting was made in December, 1883 (*l.c.*, xxxix. t. 891, Mr. Day then remarking:—"From a plant of my own, which I bought of Messrs. Hugh Low & Co., for C. Hookeræ. They both came from the

same locality in Borneo, and are so exactly alike when not in bloom that they cannot be distinguished." In 1889 Messrs. Veitch made it a variety of C. Hookeræ (*Man. Orch.*, iv., p. 32), and in 1895 it was described as a new species, under the name of Paphiopedilum amabile (Hallier fil. in *Nat. Tidschr. Nederl. Ind.*, liv., p. 450), and afterwards figured from a photograph (*Ann. Jard. Bot. Buitenz.*, xiv., p. 18, t. 4). Its characters are well shown in the annexed figure.

P. APPLETONIANUM (fig. 2) appeared in a rather mysterious way. It was described in 1893, from a plant in the collection of W. M. Appleton, Esq., of Weston super-mare, under the name of Cypripedium Appletonianum (Gower in *Garden*, 1893, i. p. 95), and was said to have been introduced with C. Hookeræ, from which it differed in the flowers, and in the absence of tessellation from the leaves. Then it was made a variety of C. Bullenianum, owing to the close resemblance to that species in its flowers (Rolfe in *Orch. Rev.*, i. p. 135). Soon afterwards it was described under the name of C. Poyntzianum (O'Brien in *Gard. Chron.*, 1894, i. p. 30), from a plant which appeared among imported C. callosum, and about the same time it came from Glasnevin as C. O'Brienianum, under which name Mr. Moore purchased it. A year later it received another name, being described as C. Wolterianum (Kranzl. in *Gard. Chron.* 1895, i., p. 160). It is now believed that all the plants known came from Siam, where it grows in abundance with C. callosum, and is frequently introduced with it. Its appearance can now be traced back to January 1889, when it flowered at Kew among some plants purchased as imported C. callosum. In fact the two are quite indistinguishable until flowers appear. They also hybridise in a wild state, and the hybrid has also been raised artificially, as has already been pointed out (*O.R.*, xi., p. 44), the history and a figure being given.

The differences between the two are well shown in the photograph, and are particularly obvious in the foliage, though other characters may be traced in the shape of the dorsal sepal and lip, with a few minor details. These differences are borne out by a comparison of numerous plants of both species. From the numerous points of resemblance between the two it may be assumed that they have a common origin, and this would make the resemblance to the species with which they grow all the more remarkable. In fact it looks like a case of mimicry or protective resemblance, and in any case is a very interesting problem. It is an interesting coincidence that the nearest ally of P. callosum is the Bornean P. Lawrenceanum, which also has more strongly variegated leaves.

It may be added that several plants have just flowered at Kew, and that the photograph reproduced was taken by Mr. E. C. Hart.

R. A. ROLFE.

CALENDAR OF OPERATIONS FOR JANUARY

BY J. M. BLACK, STREATHAM.

IT is with some trepidation that I begin the Calendar of Operations in the *Orchid Review*, for I feel that the work is one of considerable importance, and one which may influence to some extent those whose ideas are not yet settled on the best way to treat their plants, for it is to them that this Calendar is more specially directed. My instructions from the administration of the *Orchid Review* are explicit enough in this respect: "The main thing is to foresee what must be done in the coming month, and make it clear to those of less experience, *etc. requiring such assistance.*" It seems advisable to make this clear at the outset, so as not to be accused by those of more advanced Orchid knowledge of being too elementary.

Too much emphasis cannot be put upon the value of light during the winter. The glass must be kept perfectly clean inside and out, and to effect this it may be necessary to wash it outside several times within a period of a month or two, if situated in a smoky district. All plant cleaning and house-scrubbing should be finished by the end of the month.

INSECT PESTS. Cattleyas, Dendrobiums, and a good many other pseudobulbous Orchids are frequently attacked by scale. Its dislodgment can be effected by means of a stiff brush, when the plants affected should be washed with a solution of fir-tree oil or some other insecticide. This pest flourishes most when the plants are kept too dry, and in a dry atmosphere, and it will be observed that it is mostly on the back of the plants that it is found—away from water. There is here conveyed a hint that if the plants were subjected to less drying, this pest would be less troublesome.

COCKROACHES. A friend of mine who professes great prowess in the art of trapping cockroaches, recently told me of the following method: A pound of treacle and a pint of beer are mixed together, and a quantity of the mixture poured into ordinary jam jars, which are distributed over the floor of the house and tilted against the supports of the staging. The insects are attracted by the smell, and venturing in, are unable to find their way out again. A means of destroying them once they are caught will suggest itself to readers. This pest is most rampant in the Warm houses, and is very fond of succulent spikes and flowers. Phosphorus paste on crocks, or on bits of cabbage leaves, is a well-known means of destroying them, and there are other preparations advertised which can be tried in turn, as the cockroach soon begins to know a poison continuously used. Poisons should be removed in the morning and replaced at night.

WOOD-LICE.—Freshly scraped-out potatoes or carrots placed on the pots make good traps for wood-lice. These should be examined first thing

in the morning, and removed, then freshly scraped out, and replaced in the evening. Wood-lice have a great partiality to Cattleya roots, with a weakness for root-caps.

SLUGS AND SNAILS.—I have found succulent lettuce leaves the best bait for slugs and snails. The leaves should be placed about on the plants when growing dusk, and examined by lantern light last thing. Bran is also used as a bait, but, strangely, I have never had any success with it. Orange peel can also be tried. Incidentally, the spikes are the best bait, and these should also be examined. These slimy marauders are hardly ever found in the Warm houses, but are the chief insect pest of the Cool house, and if not assiduously searched for they play great havoc among the growing spikes. Where no risk is to be taken, the plant should be placed on an inverted pot standing in a saucer full of water, making sure that the leaves do not touch adjacent plants. Cotton wool wound round the base of the spike also prevents the slugs from creeping up.

THRIPS are fairly indiscriminate in their attacks, although some classes—even species—are much more addicted to them than others. Here, again, dryness and heat are conducive to their prosperity, but they make their appearance sometimes for no apparent cause whatever, and from goodness knows where. Fumigation is the antidote. When thrips appear on only two or three plants, as they frequently do, these should be washed, and an eye kept on the surrounding plants. They are with us more or less all the winter, and usually pay us a severe visitation about midsummer. If a house full of plants is badly infested, it should be fumigated two or three times at intervals of two or three days. Fumigation is not good for the plants—even with "XL. All"—and completely changes the colour of some flowers. Plants in flower should therefore be removed before fumigating.

RED SPIDER is not very troublesome among Orchids, but it sometimes attacks Dendrobiums. A hot, arid atmosphere is again the cause. It can only be got rid of by washing all the leaves on the underside with some insecticide, or sulphur, as fumigation, at a strength safe to use, does it no harm.

CATTLEYA FLY.—We hear very little of the Cattleya fly nowadays, and I hope it is extinct in collections. It was introduced with Cattleya labiata eleven or twelve years ago in enormous quantities, and menaced many collections into which it found its way. Fumigation and cutting off the affected young growths was as far, I think, as the means of eradication went. There is also a Cattleya-root fly in some collections. It can be discovered by the root swelling up into nodules. If these are cut open grubs will be found inside. When these swellings appear, the root should be cut off and burned.

It will be well to procure this month a good supply of peat, and have it

picked into lumps, and the rhizomes taken out and cut up for draining the larger pots. The peat, after the dust has been well sifted out, should be stored loosely in sacks. Apart from the saving of time later on, this preparing of peat before-hand gives it time to become thoroughly aired, and a quantity is handy to be exposed to the sterilizing influence of the sun a week or so before it is required for mixing with the other ingredients of any desired compost. As sphagnum moss deteriorates quickly in sacks it is best not to get too great a quantity in at a time, and we have never experienced much difficulty in procuring it freshly gathered. I prefer the double-headed, brown sphagnum, as it is better ripened and does not grow so quickly.

The temperatures to aim for during the month should be as follow :—

EAST INDIAN HOUSE.—Day, 65° to 70° ; night, 60° to 65°.

CATTLEYA HOUSE.—Day, 60° to 65° ; night, 55° to 60°.

INTERMEDIATE HOUSE.—Day, 55° to 60° ; night, 50° to 55°.

COOL HOUSE.—Day, 50° to 55° ; night, 48° to 50°.

These are the temperatures which one should endeavour to keep during sunless weather, *i.e.*, by the use of the heating apparatus only, and the lowest temperatures should be registered in the morning. They will rise considerably with solar heat, and during very cold weather a drop of a few degrees will do no harm, as it is better to keep the temperatures uniformly lower than to have the pipes at a very fierce heat for days together. In the event of their dropping by any accident very much lower than those advised, every effort should be made to get them up as quickly as possible, as it is when the houses remain cold for a long time that harm ensues. Particular care should be taken not to let the temperatures down after a heavy watering ; it is better to keep them a little higher when watering has been done to much extent.

DAMPING AND VENTILATION.—In the hot houses, where a large amount of fire heat will, of necessity, be used, damping down will have to be done to a good extent, but very much will depend upon the structure of the house, and the manner in which the damping down is performed. It is advisable to have a hosepipe fixed in each house, which makes damping an easy matter and, at the same time, ensures its being thoroughly done. Some houses will smell fiery, while others with a much higher temperature will be beautiful and mellow. If a house is well provided with moisture-holding material, such as coke or sand on the lower staging, with vegetation of some kind or another on the floor, and a good supply of piping, a high temperature can be secured, which will be of a healthy order. We find damping once a day during the winter sufficient in our houses, excepting during periods of hard frost. It may not be found necessary to damp the Odontoglossum house even once a day, as there is less artificial heat to lift

the moisture, but as air should be admitted here on all possible occasions, there is not much danger from excess of moisture in this house. The thing to avoid here is stagnation rather than too much moisture. The inmates of this house love a moist, buoyant and cool atmosphere, and when the Odontoglossums are not throwing up spikes they will be more or less in active growth, and will grow more during the next three or four months than at any time during the year. Air should be admitted to all the houses, both night and day, by the bottom ventilators, when the weather is at all favourable, taking care to avoid cold currents when windy by closing them on the windward side. On specially fine days, when the wind is in the south or west, the Cattleya and Intermediate houses will benefit by having **a little top ventilation as well—if only for an hour.**

WATERING.—Water with great care all plants, and especially those with pseudobulbs that are dormant, but avoid anything approaching shrivelling.

POTTING.—January is one of the coldest months of the year, and although the days are perceptably drawing out we are still in the resting period for Orchids, and where the collection is of small dimensions, or where the labour is well able to cope with the work at all seasons, I should say that any potting which could be done this month might be much better left over until next, and this remark applies with added force to those who, like myself, have to cultivate their plants within the fog-zone of large towns. A fact also not to be overlooked when the period for repotting arrives is the forward or backward condition of plants in different collections. For instance, plants grown on the Surrey hills, exposed as they are to clean air and clear light all the winter, are in the spring at least three weeks in advance of plants grown at Streatham, although only a matter of something like twenty miles distant. This month is of a most changeable character, and the fog, which threw despondency over us town growers in December, may swoop down upon us again any time during the first three parts of the month, and plants well anchored in their pots have more power of resisting this scourge than if disturbed by potting. In any case, they will lose nothing by waiting a few weeks, where it is desirous of pushing along the potting, however, some beginning can be made this month, the locality, the state of the weather and the condition of the plants all being consulted.

ODONTOGLOSSUMS.—The majority of the cool Odontoglossums flower in spring, and are in a right condition to be repotted in August and September, but any that were in flower at that season, or missed being repotted for other reasons, can be taken in hand this month or next. The best time to repot plants of O. crispum and its natural hybrids, O. × Andersonianum, O. × Denisonæ, O. × Adrianæ, and O. × Coradinei; also O. Pescatorei,

O. Halli, O. luteo-purpureum and others of like vigorous habit, is when the new growth is about two inches high. Any plant potted in the autumn that has shown unexpected vigour, and seems in want of a larger pot, can be carefully knocked out, keeping the roots uninjured and the ball intact, and placed in a larger pot, working the new compost round carefully, so that the plant need receive no check. A good potting compost for Odontoglossums is one composed of fibrous lumpy peat and sphagnum moss in about equal parts, with a tenth of the bulk of oak leaves added, together with a good sprinkling of sand, using fern rhizomes for drainage; pot fairly firm, and finish off with a half inch surfacing of sphagnum moss. Freshly potted plants should be placed together so that they may have **special care with regard to watering.**

ODONTOGLOSSUM SEEDLINGS.—Towards the end of the month I intend going through these, and potting most of those that are approximately one and two years old. The most forward of those that were raised last spring and summer will now be put into two-inch pots, this being their first shift into single pots. A two-inch pot may seem rather large for such tiny plants, as some of them will be, but this is the smallest pot we now use for any seedling. Pots smaller than this require plunging into other pots or pans, and this, in my opinion, is not to be recommended, and a little seedling gains nothing by being starved or cramped up for room. Seedlings which were raised in the spring and summer before, and which will now be about twenty months old, should be large enough to require three-inch size. A good many of the seedling Odontoglossums raised at Chessington during the early part of 1904 were put into three-inch pots last August, but the majority of them are still in the two-inch size. It is these that will be potted on towards the end of the month. Seedlings which are three years or more old should receive treatment identical with the established imported plants, but the smaller seedlings delight in a night temperature of 60°, dropping a degree or two in the morning, with a crisp moist atmosphere. I have found that Odontoglossum seedlings will not stand any coddling by having sheets of glass put over the pots on to which they have been pricked off, or by being put into glass covers, so often recommended.

COMPOST.—A good compost for these little plants, of the size referred to, is one composed of chopped up sphagnum moss six parts, clean fibrous peat three parts, and one part moderately fresh oak leaves which have been clipped up or rubbed through a half-inch sieve. A good sprinkling of silver sand should be added to this, and the whole well moistened and thoroughly mixed. The pots should be about one third filled with small clean crocks, and a little of the compost spread over them. The roots of the little plants should then be carefully spread over this, and the compost

worked round with a potting stick, finishing off with sphagnum which has either been finely chopped up or rubbed through a half inch sieve. Care should be taken not to bury the base of the little plant too deeply, but leave it under rather than on the surface of the compost, and below rather than above the rim of the pot. A couple of days after potting they should be gone over with a watering can and rose, well settling the surface moss, which operation can be repeated in the course of another day or two, and then afterwards water individually as they require it, but give them a good soaking periodically, making sure that water has reached the drainage of them all. An effort should be made to secure the temperature I have named as much as possible—by covering the house up with mats or blinds —and as this will be difficult to find in any part of the Odontoglossum house, a suitable corner in another house should be found, where the right conditions are available.

NATURE v. THE ORCHID GROWER.

MR. WATSON asks (vol. xiii., p. 348)—"Is Nature's way the wrong way after all? . . . It is certain that she cannot grow seedling Orchids as they are now grown by the up-to-date breeders, whose actual successes in cross-breeding are beyond the dreams of the Orchid fancier of twenty years ago." I should rather put it that the Orchid breeder can now raise seedling Orchids of many kinds as successfully as Nature herself. Nature's primary object is the reproduction of the species, and this she accomplishes with complete success, though she cannot always protect the young seedlings from enemies and adverse conditions in the same way as does the Orchid grower, who makes this his first concern. Nature is only incidentally a cross-breeder, but even this she accomplishes in some cases with remarkable success—Odontoglossums with a success which for years was the despair of Orchid growers, who at last have learnt the trick. And natural hybrids among Orchids are far more common than is sometimes supposed. As regards culture, is Nature such a poor hand at the business as Mr. Watson suggests? She can grow all her Orchidic children, but there are many which baffle the best growers, because they have not yet learnt just how Nature sets about the business in their individual cases. Even as regards rest I am not sure that we can afford to ignore Nature's ways, and we are often copying her when we are unconscious of the fact.

X.

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On page 357, line 8, "heat" should read "rest." The sentence would then be: Imported Cattleyas require (or take) more rest than those that are raised at home.—J.M.B.

CATTLEYA × MARONI, WESTFIELD VAR

THE annexed figure represents the beautiful Cattleya × Maroni, Westfield var., which received an Award of Merit from the R.H.S. on September 20th last, when exhibited by Francis Wellesley, Esq., Westfield, Woking. It is an extremely beautiful form, having bronzy yellow sepals and petals, and a lip of the most beautiful rosy crimson, with darker veins in front, and some yellow veining on the disc. The photograph here produced was not

Fig. 4. CATTLEYA × MARONI, WESTFIELD VAR.

taken from the flower direct, but from a very beautiful painting by Macfarlane, and the figure is necessarily somewhat reduced, for the painting shows a breadth of slightly over five inches across the petals. The type, it will be remembered, was originally raised by M. Ch. Maron, Brunoy, France, from C. velutina ♀ and C. Dowiana aurea ♂, and the combination has proved a very brilliant one, as the colours of the two parents harmonise together sufficiently.

CYPRIPEDIUM FAIRRIEANUM.

WHERE IS ITS NATIVE HOME?

I was very much interested in your articles on the above species and its hybrids, which appeared during the early part of the year, in which you bravely attempted to solve its native habitat. In the end we were left to choose between Bhotan (Bhutan) and Assam, with a preponderance of evidence in favour of the latter. In the light of its rediscovery, the articles make interesting re-reading, for now, after most of us have seen the living flowers on the re-imported plants, we are still struggling to solve the same riddle. Let us make a few logical deductions, and see if we cannot locate its native home.

Your remarks (*O. R.*, xiii., p. 13), that the plant was sent to Europe by Simons, who was practising as a Doctor at Nowgong, may have more in it than appears on the surface. It is quite conceivable that in his profession as Doctor he might be called to comparatively long distances to patients. Such journeys northward would take him to the Brahmaputra River, and probably across near the borders of south-east Bhotan, and here he would in all likelihood find the new C. Fairrieanum, and his scanty visits to that region would account for no new importations coming to hand.

Another important factor in the non-arrival of new plants was that about that time, in the early sixties, differences arose between the Bhotanese and the Indian Government with the result that the British Envoy was bundled out of the country, and since that time, until quite recently, Bhotan has been absolutely forbidden to Europeans. The coincidence is surely striking. And now let us begin again from another place quite 250 miles west of Nowgong.

When Sir Frank Younghusband conducted his mission through the Chumbi Valley and into Thibet, he found it necessary to pass through some portion of Bhotan, and managed to so ingratiate himself with the natives that he was introduced to their Ruler, who subsequently lent great aid to the Mission. On the return of the Mission to India this friendship was not allowed to drop, and an officer with an envoy, who was sent to invest the Ruler with a decoration, was received with much cordiality, and given permission to travel where he would.

To this permission and envoy I have no shadow of doubt that we Orchidists owe the very interesting re-discovery of the long lost C. Fairrieanum. Mr. Dimmock, in your quotation copied from the *Florist's Exchange*, confirms this, when he says that we owe the re-discovery to a British Officer whilst surveying in Bhotan.

But Bhotan is a large tract of country, over 200 miles long by 100 miles wide, and I think we can narrow the native home of C. Fairrieanum to a

quarter of this area. The route the Envoy would take to Punakha, the Bhotanese capital, would be along and through the north-western portion of that country, and their time, &c., being fairly limited, their return no doubt would be much along the same route, with digressions north and south. North of the route I should have very little hope of finding the Cypripedium, for the higher altitudes consequent on approaching the Himalayan Mountains, ranging from 9,000 to 16,000 feet, would be far too cold to hope for success here, but south of the route, where the valleys range from 4,000 to 7,000 or 8,000 feet, and running down to the Brahmaputra, here, in the south-western half, and probably all along the southern portion of Bhotan till we come to near Nowgong, where we originally started, I feel convinced is the native home of our long lost and now rediscovered Orchid, C. Fairrieanum.

HENRY THORP.

The above was received before our correspondent could have seen the note reproduced at page 354. It is now pretty clear where the rediscovered plants came from, but it would be rash to assume that it grows in only a single locality. We have now two independent records from Assam and two from Bhotan. Can anyone connect Captain Tronson with the Bhotanese troubles mentioned by our correspondent? There is no doubt about his having sent plants to Calcutta in 1861, and the record he gave was Assam.—ED.]

ORCHIDS AT GLASNEVIN.

"You must see Vanda Lowii," was what tempted us from the trees, and that lovely stretch away down by the Tolka river where one could "wander and wander away with Nature, the dear old nurse." Yet, Vanda, or Arachnanthe Lowii, is a plant to be looked at, and to be talked about, too, with one long drooping tail-like spike measuring 8ft., slung up over a tie-rod of the roof, and again depending to the bed on which the plant stands. Other flower spikes were in course of development, but this one was studded with its yellow flowers, heavily barred with chocolate, from top to bottom, save the top pair, which, according to the peculiarity of this species, turn to old gold with age, but become at the same time powerfully perfumed, a friend remarked, attracting crawlers up the soil-touching tails by the smell at the top. Amongst other Orchids in bloom were the truly regal Cypripedium Curtisii, which impressed us as being the finest of the genus we had yet met with; C. Charlesworthii, Burlingtonia venusta, and a grand spike of Oncidium varicosum, suggestive of the finest type, Rogersii. The great Orchid collection impressed one by the fresh, clean, and luxuriantly healthy condition.—*Journ. Hort.*, 1905, ii., 548.

CURIOSITIES OF HYBRIDISATION.

I HAVE read with much interest the article by Mrs. Emily Thwaites on the time taken by seed-pods in maturing. The shortest time I have observed during the ten years that I have been hybridising was in the case of a Lælia anceps crossed with Brassavola Digbyana. The capsule opened at the end of three and a half months, and on examining the seeds with a Stanhope lens I could find only about fifty good seeds, which were sown in May, 1903. All the good seeds germinated, but only ten plants survived, and two of them flowered at the end of September last. I have many times repeated this cross since, but without success.

The longest time in reaching maturity that I have observed was in the case of a Cattleya Skinneri crossed with Epidendrum Parkinsonianum, which took fourteen and a half months to ripen. All the seeds were good, and germinated, but the young plants grew at a hopelessly slow rate. I have only been able to save one of these, which is five years old, but not more than 15 centimetres high.

On the other hand, crosses which I have made with Lælia pumila as the seed parent have never been more than one year in ripening. For example, L. pumila, crossed with Brassocattleya × Mrs. J. Leemann, took nine months, with Lælio-cattleya × Eudora, ten months, with Brassavola Digbyana twelve months. All the seeds have germinated well, and, among others, the last-named will soon be in bloom.

The difference between these results and those described by Mrs. Thwaites is doubtless due to the fact that in France we have a more favourable mid-day sun and a warmer temperature than in England.

F. DENIS.

Balaruc-les-Bains,
Herault, France.

ORCHIDS IN SEASON.

SEVERAL beautiful flowers are sent from the collection of Francis Wellesley, Esq., Westfield, Woking. Cypripedium × tessellatum rubens is a brilliantly coloured form which received an Award of Merit from the R.H.S. on December 19th last, when exhibited by Messrs. Sander & Sons. The flower is almost uniformly ruby-purple, with a trace of darker dotting on the petals. C. × Thalia var. Mrs. Francis Wellesley is a very handsome form, to which a First-class Certificate was given by the R.H.S. on December 19th. It is of excellent shape, and the dorsal sepal is copiously blotched with purple, while the petals and lip are also very richly coloured. C. × Mrs. De Vere Beauclerk (ciliolare ♀ × Fairrieanum ♂), is a charming thing

resembling C. × vexillarium, but rather lighter in colour, and the petals very prettily spotted. It was exhibited at the same meeting.

Lælio-cattleya × Ophir magnifica (L. xanthina × C. Dowiana aurea) is a very richly coloured form, sent from the collection of J. Leemann, Esq., Heaton Mersey, by Mr. Smith. The sepals and petals are very deep yellow, and the front of the lip light purple.

A fine form of Paphiopedilum × Leeanum is sent from the collection of F. M. Burton, Esq., Highfield, Gainsborough, in which the lower sepal is very broad, and like the dorsal sepal in colour, except that the spots are smaller and limited to the basal angles. It is probably an accidental occurrence, as the flowers were normal last year.

Several beautiful flowers are sent from the collection of the Right Hon. J. Chamberlain, M.P., Highbury, Birmingham, by Mr. Mackay. Lælio-cattleya × Perseus (C. × Minerva × L.-c. × Clive) has improved since its first flowering, and has broad sepals and petals of light purple colour, while the front of the lip is very deep blackish purple, and the throat yellow. Cattleya × Gem C. Bowringiana ♀ × C. Dormaniana ♂ is a curious little hybrid, raised in the collection, and has rather narrow sepals and petals, lilac-purple in colour, and a three lobed lip with broad ample side lobes, and a small round bright purple front lobe with darker veins. The other flower is a light blush pink form of Lælia anceps, like a light L.a. Hilliana.

A magnificent series of Paphiopedilums is sent by O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogerson), to illustrate the value of these plants for winter blooming. The forms of P. insigne are very numerous, and those of P. × Leeanum only less so, while numerous other hybrids are excellent, and show how well their culture is understood. Space fails us to enumerate them, but a few may be mentioned. P. Mastersianum × Lawrenceanum atro rubens is a richly coloured form, fairly intermediate in shape. P. tonsum, crossed with the same pollen parent, is also richly coloured, but has more of the tonsum shape, and spots on the petals. P. tonsum × niveum has resulted in a good form of P. tonsum, so that the cross appears to have been ineffective. P. Curtisii × ciliolare is a remarkably fine hybrid, which has brought out the best qualities of its two closely allied parents.

Several beautiful flowers are sent from the collection of M. Oscar Fanyau, Hellemmes-les-Lille, France, by M. Cleverley. Odontoglossum crispum × luteopurpureum, now flowering for the second time, is, of course, a form of O. × Denisonæ, and has bright yellow flowers blotched with brown. O. crispum × polyxanthum is a nicely blotched form of O. × waltonense. There is also an unspotted form of O. crispum, very closely resembling O. c. virginale, and a form of Cattleya maxima with lines on the

sepals and petals. It was imported eight years ago, and is now flowering for the second time with the same character.

Two interesting flowers sent from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, by Mr. Smith, are Paphiopedilum × Salus (concolor × Dayanum) and P. × Hera Cambridge Lodge var., the latter a very charming form.

A box of flowers from the collection of J. J. Neale, Esq., of Penarth, is sure to be interesting, for size and colour are not the only qualities demanded of candidates for admission there. On the present occasion Mr. Haddon sends a fine panicle of Seraphyta multiflora and flowers of Masdevallia muscosa, in each case accompanied by a photograph. Other rarities are Camaridium ochroleucum and Liparis longipes. The showier species are represented by Oncidium crispum, Forbesii and tigrinum, Dendrobium bigibbum, Masdevallia tovarensis, Epidendrum ciliare. Zygopetalum Mackayi and pallidum, while the graceful Platyclinis Cobbiana completes a very interesting series.

Among the Orchids which are making a brave show at the present time in many collections are Lælia anceps and L. autumnalis.

PRESENT DAY ORCHID CULTURE.

MR. W. P. BOUND, of Gatton Park, Reigate, recently lectured at Beckenham on "Present-day Orchid Culture." Mr. Bound considers most Orchids as easily cultivated as "Geraniums," and predicts extended culture in all gardens where there are glass houses. Propagation is necessary to keep a collection vigorous. Beneficial changes are taking place, which simplifies the operation of potting. At Gatton, all baskets, perforated pots, &c., are being replaced by the ordinary every-day flower pot, and the potting is done more like that for other classes of plants. The feeding of Orchids is condemned *in toto* by Mr. Bound, but by his method of potting a more generous diet is afforded than heretofore. Instead of filling the pot two-thirds full of crocks, just one or two are placed in the bottom, then a quantity of fern-rhizomes are chopped, then a compost of two-fifths peat (and more of the fine is left in than formerly), two-fifths sphagnum, and one-fifth good Oak leaf, well broken up, and a sprinkle of small crocks, surfacing with chopped sphagnum, are what is allowed.

The roots of the plants, whether fleshy or fibry, form a guide as to the compression of the soil about them. If fleshy, rather loose: if fibrous *vice versa*. Mr. Bound does not favour a north house for Odontoglots: any other aspect is preferable. Many questions were answered by the lecturer, and at the close the hearty thanks of the meeting was accorded him for his very instructive and well-delivered lecture.—T.C. in *Journal of Horticulture*.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during January, on the 9th and 23rd, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

We would remind our readers of the special Exhibitions of Orchids to be held through the year, as reported in full in our issue for October last (pp. 293-295), and further point out that the special subjects selected for the meeting on January 9th are, Lælia anceps, varieties of the type coloured, with Calanthe and Calanthe hybrids. The subject for the second meeting is Oncidium, and, of course, any species or hybrid of the genus will be eligible.

The Manchester and North of England Orchid Society will hold meetings at the Cotton Exchange, Manchester, on January 11th and 25th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 o'clock p.m.

We are yet a long way from 1908, but we have already received the provisional Programme of the sixteenth International Horticultural Exhibition, or Jubilee Centenary, of the Société Royale d'Agriculture et de Botanique de Gand, to be held at Ghent from April 26th to May 3rd, 1908. Classes 17 to 40 are devoted to Orchids. We shall have something more to say on the subject later on.

The last volume of *The Garden* is very appropriately dedicated to the memory of the late Mr. H. G. Moon, to whom its pages are indebted for so many excellent paintings, of Orchids and various other plants.

We have received for examination two beautiful paintings from Miss Daws, Hawkhurst, Sussex, namely Paphiopedilum callosum and what we take to be a form of the one known as Mrs. Canham. Both reached the artist under the same name, and they have been sent to us for identification. The circumstance reminds us that Orchid growers are well catered for in the matter of illustrations, as may be seen by a glance at our advertisement pages.

A reader writes:—"I am greatly interested in the *Orchid Review*. There always seems something fresh to find out about Orchids."

We invite our readers to forward us their experiences in any branch of Orchid culture. Two or three interesting subjects are under discussion at the present time, and such discussions make for progress. Photographs of interesting subjects suitable for reproduction are also invited.

ORCHID PORTRAITS.

AERIDES FIELDINGII.—*Journ. Hort.*, 1905, ii., p. 589, with fig.

CATTLEYA BICOLOR. *Journ. Hort.*, 1905, ii., p. 565, with fig.

CATTLEYA × PEETERSII VAR. MR. FRANCIS WELLESLEY. *Gard. Mag.*, 1905, pp. 791, 792, with fig.

CYMBIDIUM × GAMMIEANUM.—*Gard. Chron*, 1905, ii., p. 417, fig. 159.

CYPRIPEDIUM × DAISY BARCLAY.—*Gard. World*, 1905, pp. 975, 977, with fig.

CYPRIPEDIUM DEBILE, Rchb. f. *Gard. Chron.*, 1905, ii., p. 442, fig. 166.

CYPRIPEDIUM × SAN-ACTEUS. *Gard. Mag.*, 1905, pp. 820, 821, with fig.

CYPRIPEDIUM × THE BARON.—*Gard. Chron.*, 1905, ii., p. 405, fig. 153; *Garden*, 1905, ii., p. 369, with fig.

DENDROBIUM JAMESIANUM.—*Journ. Hort.*, 1905, ii., pp. 540, 541, with fig.

DENDROBIUM LUTEOLUM.—*Journ. Hort.*, 1905, ii., p. 519, with fig.

LISSOCHILAS MAHONI, Rolfe.—*Bot. Mag.*, t. 8047.

ODONTOGLOSSUM × LAMBEAUIANUM EXQUISITUM. —*Gard. Chron.*, 1905, ii., p. 434, fig. 162.

ODONTOGLOSSUM × SMITHII. *Gard. Chron.*, 1905, ii., p. 427, fig. 155; *Journ. Hort.*, 1905, ii., pp. 540, 541, with fig.; *Gard. Mag.*, 1905, pp. 804, 805, with fig.; *Garden*, 1905, ii., pp. 400, 401, with fig.

ODONTOGLOSSUM × VUYLSTEKEAE. *Garden*, 1905, ii., p. 353, with fig.

SOPHROCATTLEYA × DORIS. *Gard. Chron.*, 1905, ii., p. 412, fig. 154.

VANDA SANDERIANA, CHILLINGHAM VAR. *Gard. Chron.*, 1905, ii., pp. 437, 438, fig. 165; *Garden*, 1905, ii., p. 414, with fig.

CORRESPONDENCE.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily.)

W. R. S. The flower is a fairly typical form of Cattleya granulosa. The variety Schofieldiana is much more spotted with brown on the sepals and petals.

H. H. C.—A small, light yellow form of Odontoglossum × Adrianæ, a natural hybrid between O. Hunnewellianum and O. crispum, which explains its coming with the latter.

Photographs received with thanks.—H. H., D. B. C., G. P. A.

Owing to pressure on our space several matters are held over, including two illustrated articles.

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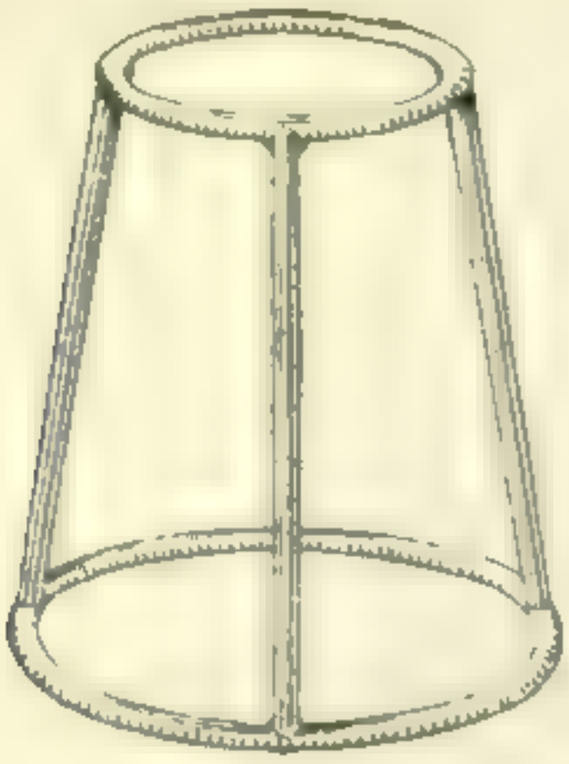

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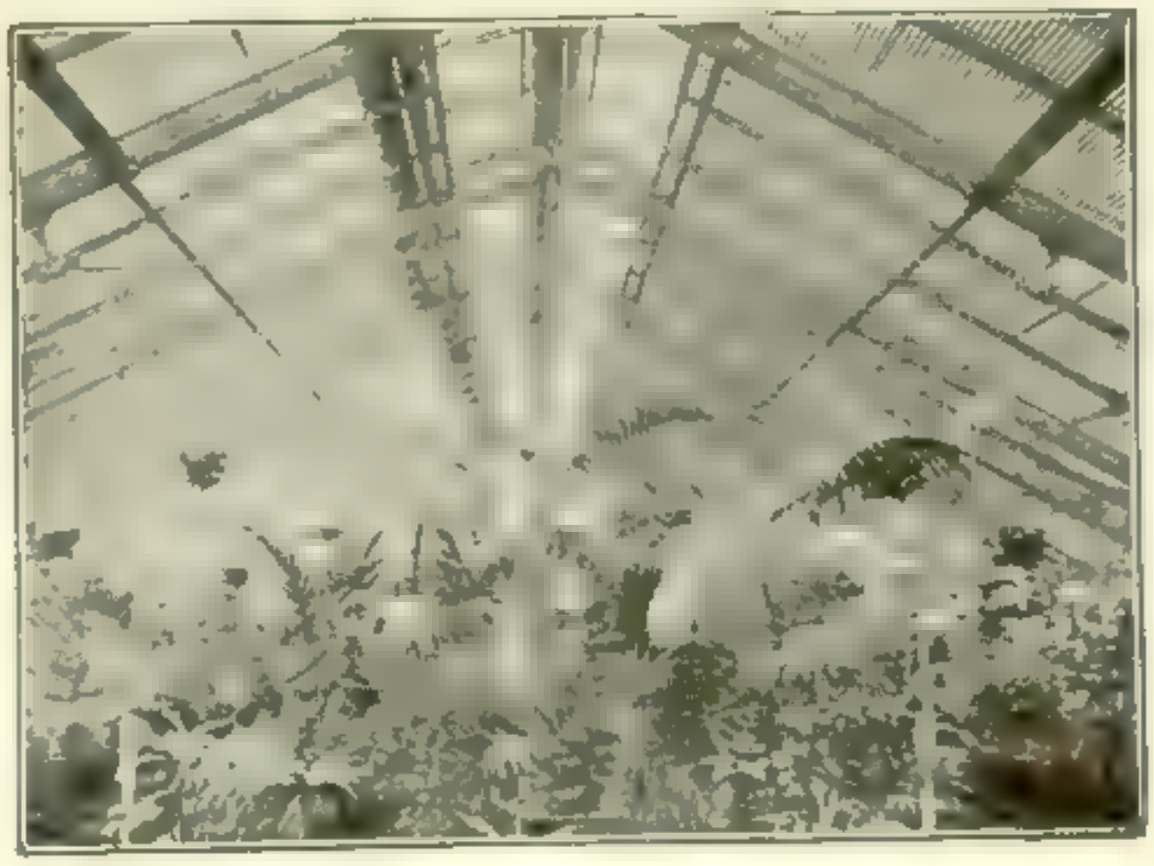

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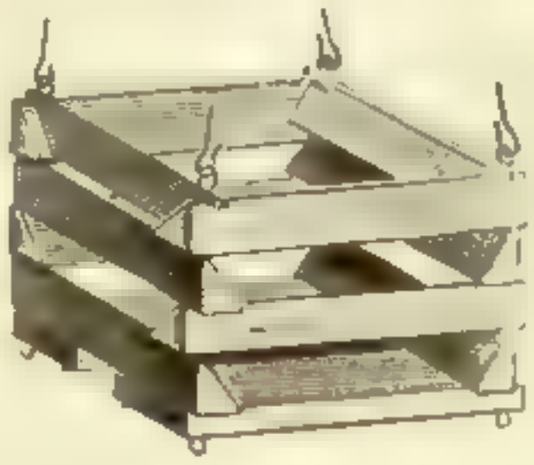

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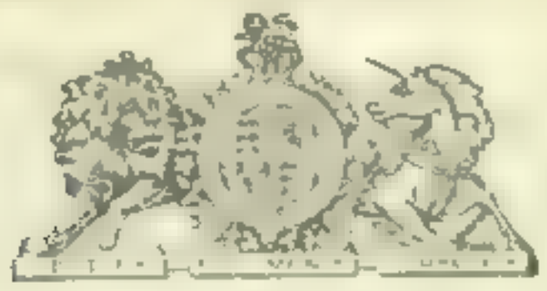

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THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XIV.] *FEBRUARY*, 1906. [No. 158.

DIES ORCHIDIANI.

"Strips of choice Odontoglossums at one penny a packet," did you say? Not just yet! but such a thing seems hardly impossible, judging by the rapid progress which is being made in raising these beautiful plants from seed. Mr. Crawshay has just written an enthusiastic article on the subject, in which he remarks that "the future of Odontoglossums lies in the hands of hybridists." I think so too, but there is one observation that puzzles me a little. He remarks: "It is amusing to see those who hold quantities of very valuable plants attempting to destroy their value by producing them artificially." And he speaks of prices ranging from £100 to £1,500, the latter sum being "commonly spoken of and said to have been paid" for one marvellous form of O. crispum. But we cannot all add such plants to our collections. Perhaps in the halcyon days that are coming we shall be able to purchase them for less, and even regard the story as a "passing glimpse into a legendary world."

We are indeed revolutionising Odontoglossum culture, and the remarkable O. × Smithii figured at page 9 only served to emphasise the rapid progress made during last year, as summarised on an earlier page. We have now succeeded in uniting the Colombian and Mexican Odontoglossums, and both with the violet-purple O. Edwardii, besides blending with the first named the brilliant orange-scarlet Cochlioda Noetzliana and the very distinct Miltonia Warscewiczii. When they are still further intermixed, and a few other allied genera thrown in—for this is clearly possible—some remarkable productions may be anticipated. And it is but a few years ago that we were discussing the possibility of ever being able to raise seedling Odontoglossums in our collections. Such progress must tend to popularise these beautiful plants, for it is rapidly bringing choice forms within the reach of every Orchid grower, and we may regard the change with unmixed satisfaction.

And look at the vigour of the beautiful seedlings which now appear at every horticultural meeting. It is a pleasure to take charge of such plants, which is not always the case with imported ones. In the latter case we take in hand a batch of dried bulbs, and either pot them up at once or lay them on damp moss, until they show signs of breaking. Some start strongly and well, but others are weak and spindly, and a few die outright. Then a few spikes appear, which are either pinched out, to prevent further weakening the plant, or perhaps a single flower is allowed to develop just to see what the plant is like. The first result is usually a large proportion of quite ordinary forms, with a few good ones, and perhaps one or two surprises. The next thing is to grow them on, until they become thoroughly established, but they often require much care and coaxing before they become as strong as seedlings of the same size, and then only do they appear healthy and happy, and a credit to the grower. Of course seedlings can only be grown under proper conditions, but when these are once secured they simply romp ahead with ordinary care. The need of selection comes in in both cases, but the raiser has this advantage over the importer than he can select the parents at the outset, and if only good forms are used he can await the results with confidence. Quality must tell in the end, and the improvement, aided by selection, will be progressive.

Some interesting remarks on the subject of "Nature v. the Orchid Grower" have recently appeared in these columns, and among them I noticed one to the effect that "somebody took Dendrobiums into a cold house in the winter, and everybody followed suit." But why was it? There must have been some reason for the practice, or some benefit observed from it, or it would have been discontinued. I do not know how or when the custom began, but it is no recent development, as it has been practised with D. nobile as long as I can remember, and has since been extended to some of its hybrids and allied species. And the practice is sound, for the complete rest which it ensures results in increased floriferousness. Further, it is in accordance with Nature's teachings, for in the region where these plants grow naturally there is a wide range of difference between the summer and winter temperatures, and during the latter period the plants get a complete rest. To keep such plants in a hot stove throughout the year would be a wide departure from Nature's practice.

But Nature does not grow all her Dendrobiums under identical conditions, and she succeeds in each case. The grower has to take plants as he finds them, and very frequently he cannot avail himself of many of the hints which Nature provides for his guidance. In spite of this he often

succeeds in growing them well, which is all the more to his credit. But he sometimes fails, and thus demonstrates that Nature's way is not the wrong way after all. His success also proves much the same thing, although he may be unconscious of the fact, for it is a trite saying that the grower does not change the nature of a plant by merely cultivating it. Hybrids and races of garden origin, of course, do not affect the argument.

The recent remarks by Mrs. Thwaites and M. F. Denis under the head of "Curiosities of Hybridisation" are very interesting, and I hope others will contribute something from the rich stores of their experience. There must be piles of unrecorded experiments from which something useful could be learnt.

I note with interest that the Royal Horticultural Society have arranged another Hybridisation Conference, or "Conference on Plant Breeding," to be held from July 30th to August 3rd next, and the importance of the subject may be gauged from the fact that the programme extends over five days, including the date of one of the usual fortnightly meetings. Orchids are likely to be well represented, and the event will be looked forward to with unusual interest.

A correspondent sends me an amusing newspaper cutting headed "An Orchid like a Bulldog": —"The most remarkable flower in the hall was an Orchid exhibited by Major Holford, which experts likened to a bulldog. It was awarded a First-class Certificate. Its name is Cypripedium Alcibiades magnificum.

"Its bulldog likeness lay in its squat, heavy-jowled appearance. 'The squareness of its dorsal and inferior sepal,' said an expert, 'and the petals being so broad make it an almost perfectly round flower—a most remarkable thing in an Orchid.'"

How's that for a description?

ARGUS.

ODONTOGLOSSUMS. PAST, PRESENT, AND FUTURE.

THIS is the title of an interesting article in the *Gardeners' Chronicle* for January 27th from the pen of Mr. De Batt Crawshay (p. 49). The author remarks that the taste in Odontoglossums has changed of late years, the heavily blotched forms now being the most sought after, whereas formerly the fine unspotted forms were considered the more beautiful. From 1880 to 1885 the natural hybrids were much in vogue, the rosy and coloured

forms being highly valued. After that came the day of high priced Odontoglossums, commencing with the purchase of O. × excellens Knox's var. by Baron Schröder, for 165 guineas, the plant then being called a yellow Pescatorei. Later on came the "spotted crispums," the demand for which is still growing, the plants of to-day being pre-eminently the blotched crispums.

Now the garden hybrids are coming to the front, and those who observe carefully the signs of the times can see that they will form the great future of the genus. The hybrids will in a great measure displace the species, always excepting the fine varieties of the species, which will be in demand as parents. In the front rank are placed O. × Vuylstekei, O. × Vuylstekeæ, O. × Rolfeæ, and O. × Smithii.

"We all know," observes the author, "that in Orchid-raising there is no finality for the hybridist, his cry being always 'Better things are coming,' and up to the present he has not been far wrong, though, of course, the art is only yet in its infancy; but if it goes on for, say, twenty years, with the relative improving ratio of the last ten, well, what will be there then for the hybridist of that day to cry? I hope I may be there to hear him and help him, as now, cry out 'Better things will come.' That the future has some marvellously fine things in store goes without saying. The crosses made and young plants resulting contain a wonderful harvest of fine things for us all, and as each year goes by more care is taken to cross only what will give a good result, profiting by the experience of past failures, of which I am sorry to say some raisers do not speak: if they did so, it would be to the general benefit of all others."

Mr. Crawshay discusses the possibility of obtaining a scarlet, and even a blue crispum, and remarks that no one will dispute the fact that we should all go more or less mad if we obtained either the one or the other.

Respecting the garden-raised blotched crispum, Mr. Crawshay remarks "all of us are doing our best to raise this much-sought-for plant in quantity. I say in quantity advisedly, for it has been done, but if only one now and then appears we shall still be where we are at present. It is amusing to see those who hold quantities of very valuable plants attempting to destroy their value by producing them artificially. The reason is, I think, that none of us believe we shall succeed so as to damage the value of our present blotched crispums."

"Contemplating the work done already, and considering the many intelligent workers there are both here and upon the Continent, who will say that the future does not contain a vision of hybrids that will possibly, nay probably, make some of our present-day wonders look quite ordinary things? I have no doubt we are upon the threshold of a great advance in Odontoglossum raising."

R.H.S. ORCHID COMMITTEE.

THE following constitute the Orchid Committee of the Royal Horticultural Society for the current year. (New members are indicated thus *) :

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NOVELTIES OF 1905.

AT page 1 we briefly alluded to the novelties of 1905, and it may be interesting to give further details of the more striking of those which have not yet been adequately dealt with in these pages.

ARACHNANTHE ANNAMENSIS, Rolfe.—A striking species, introduced from Annam by Messrs. Sander & Sons, through their collector, W. Micholitz, and flowered at the Royal Botanic Gardens, Glasnevin, in June last. It is most allied to the old Arachnanthe moschifera, Blume, the Musk-scented Spider Orchid, but has much longer leaves, and a lip of quite different structure. The plant is about eighteen inches high, and the inflorescence is a foot long, and bears six flowers, which are as large as those of A. moschifera, and resemble some huge yellow spider, very heavily barred with red brown, the resemblance being increased by the falcately curved petals and lateral sepals.—*Gard. Chron.*, 1905, i., p. 391.

BONATEA ANTENNIFERA, Rolfe.—A native of Rhodesia, sent to Kew by C. F. H. Monro, Esq., of the Office of Mines, Buluwayo. It is closely allied to the well-known B. speciosa, Willd. *Bot. Mag.*, t. 2206, but is much taller, being three feet high, with longer leaves and a laxer inflorescence of equally large flowers, and the lobes of the lip and petals much more slender. These are about two inches long, and antenna-like, in allusion to which the name is given. The flowers are green and white.—*Gard. Chron.*, 1905, ii., p. 450.

BULBOPHYLLUM CRENULATUM, ROLFE.—A Madagascar species, somewhat resembling the Indian B. cylindraceum, Lindl., in habit, but having dull purple flowers, and a remarkably crenulate lip, in which respect it is only comparable with another Madagascar species, B. robustum, Rolfe. It flowered at the Royal Botanic Gardens, Glasnevin, in January, 1904.—*Bot. Mag.*, t. 8000.

CIRRHOPETALUM BREVISCAPUM, ROLFE.—An interesting little species which flowered at Kew in March, 1905. It is a native of Perak, and was presented by Mr. F. W. Moore, Curator of the Royal Botanic Garden, Glasnevin. It is allied to the Burmese C. lasiochilum, Hook.f., and has short single-flowered scapes, and the dorsal sepal and petals purple, while the lateral sepals are yellow, spotted with red-brown. The lip is purple, and very hairy.—*Bot. Mag.*, t. 8033.

CATTLEYA LAWRENCEANA, Rolfe. A handsome species, from the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, which received an Award of Merit from the R.H.S. in March, 1905. It was introduced from Annam by Messrs. Sander and Sons. It belongs to the C. speciosa group, but is taller in habit, in which respect it approaches C. Mendelii var. It has sepals and petals are light buff yellow, and the front lobe of the lip cream white, with the markings on the disc deep orange in front and bright yellow near the base. The disc of the lip bears five imbricate keels in front, three of which extend to the base.—*Gard. Chron.*, 1905, i. p. 227.

CYPRIPEDIUM ERYTHRONEURUM, Rolfe. A striking new species, introduced from Annam by Messrs. Sander & Sons through their collector, W. Micholitz, and flowered by Mr. F. W. Moore, at the Royal Botanic Gardens, Glasnevin. It is allied to C. Parishii, Rchb. f. and C. concolor, Lindl., but is more slender in habit. The leaves are over a foot long by half an inch broad, and the inflorescence produced four flowers, about an inch and three-quarters long. The colour is white, with a few rows of purple dots down the centre of the petals below the middle, while the three-lobed lip is closely lined with red-purple. The column is remarkable for its bright crimson colour, in allusion to which the name is given. *Gard. Chron.*, 1905, ii., p. 427.

CYPRIPEDIUM SCHRODERI, Rolfe. A species from Messrs. Sander and Son's Annamese importations, which flowered in the collection of Baron Sir H. Schroder, the Dell, Egham, in April last. It is allied to C. giganteum and C. Lowianum, but has smaller flowers with rather narrower petals. The sepals and petals are light greenish, somewhat lined and minutely dotted with red-brown. The lip is light yellow, with five or six strong red-brown stripes on the side lobes, and a zone of red-brown in front, similar to that seen in C. Lowianum, but narrower and lighter in colour, while a few red-brown spots occur on the disc.—*Gard. Chron.*, 1905, i. p. 243.

CYPRIPEDIUM GRATRIXIANUM, Sander. A species allied to C. exul, but having broader leaves, and some other differences. It was introduced from Annam by Messrs. Sander and Sons, St. Albans, who exhibited it at a meeting of the R.H.S. in January, 1905. The flowers are much like those of C. exul in general appearance. *Gard. Chron.*, 1905, i, pp. 76, 77, fig. 35.

ERIA GLOBIFERA, Rolfe. An interesting novelty introduced from Annam by Mr. W. Micholitz, collector for Messrs. Sander & Sons, St. Albans, and flowered at the Royal Botanic Gardens, Glasnevin. It is allied to E. leiophylla, Lindl., now referred to the section Dendrolirion, and has globose pseudobulbs borne on a creeping rhizome, which bear a single oblong leaf at their apex, and at the base a single-flowered scape, the flower being light yellow, with some red stripes at the base. The sepals outside are covered with a dense white tomentum.—*Gard. Chron.*, 1905, ii., p. 449.

EULOPHIA PANICULATA, Rolfe. A large epiphytic species bearing a tall scape, about five feet high, terminating in an ample panicle of numerous flowers. It first flowered at the Royal Botanic Gardens, Glasnevin, in June, 1904, and Mr. Moore states that he picked it up in one of Messrs. Sander's houses in September, 1902, with the record that it was purchased at the sale of the late Mr. Alfred Bleu's Orchids, and that nothing further was known of its history. It now appears that its native country is Madagascar, a plant from that country having flowered in the collection of Herr C. Garber, Whlgb., Paro-di-Trento, Süd Tyrol, Austria, and proved identical. The inflorescence sent by Mr. Moore had fifteen side branches and an aggregate of nearly 150 flowers. The sepals are dusky brown in colour, and the petals and lip yellowish green, lined and somewhat reticulated with purple brown. It is very distinct.—*Gard. Chron.*, 1905, ii., p. 197.

EULOPHIA UNDULATA, Rolfe.—A native of Rhodesia, sent to Kew by C. F. H. Monro, Esq., of the Office of Mines, Buluwayo. It is a terrestrial species, having subterranean pseudobulbs, producing a tuft of three to five narrow plicate leaves, and an erect scape about a foot high. The sepals are lined and suffused with purple-brown on a paler ground, and the petals and lip are pale green, the latter having three prominent undulate keels on the disc, in allusion to which the name is given. It belongs to the section Cyrtopera.—*Gard. Chron.*, 1905, ii., p. 198.

LISSOCHILUS MAHONI, ROLFE.—A remarkable novelty, almost rivalling L. giganteus, Rchb. f., to which it is most allied, though differing in having the side lobes of the lip green, striped with brown, and the yellow keels much enlarged. It also was sent to Kew from Uganda, in April, 1902, by Mr. John Mahon, and flowered about the same time as the following. For several weeks it formed a conspicuous object, standing above the tank of the Victoria house. The leaves are $4\frac{1}{2}$ to $5\frac{1}{2}$ feet long by $3\frac{1}{2}$ to 4 inches broad, and the scape reached a height of 8 feet, and produced about three dozen flowers. The sepals are green lined with brown, the large rounded petals lilac-purple, and the lip, as described above, has a purple front lobe.—*Bot. Mag.*, t. 8047.

LISSOCHILUS UGANDÆ, ROLFE.—An interesting addition to the genus, which was sent to Kew in 1902, by Mr. John Mahon, then Curator of the Botanic Gardens at Entebbe, Uganda, and flowered in the warm house in April, 1905. In habit it resembles a large Phaius, and the elongate, ligulate, plicate leaves are two to three feet long by about an inch broad. The scape is about $3\frac{1}{2}$ feet high, and bears about two dozen flowers, having reflexed greenish sepals tipped with brown, and the petals and lip bright yellow. It is most allied to L. lata, Rolfe, a species not in cultivation.—*Bot. Mag.*, t. 8044.

LÆLIA RUBESCENS.

LÆLIA rubescens is not commonly met with in cultivation at the present time, but a good plant of it is shown in the annexed illustration, which is reproduced from a photograph sent by Mr. H. Haddon, gardener to J. J. Neale, Esq., of Penarth. It was taken by one of Mr. Neale's sons a year ago, when the plant bore eight spikes and an aggregate of about thirty-six flowers. This year the plant has nine spikes. The species has been known for upwards of sixty years, being originally described by Dr. Lindley, in 1840 (*Bot. Reg.*, xxvi., t. 41), from a plant which flowered in the collection of George Barker, Esq., of Birmingham. It had been obtained from Mr. Knight, of Chelsea, without any clue to its origin. In

Fig 5. LÆLIA RUBESCENS.

the following year Lælia acuminata was described by Lindley (*l.c.*, xxvii., Misc., p. 17, t. 24), from plants which flowered at Chiswick, and in the collection of Sir Charles Lemon, at Carclew. It was sent from Guatemala by Hartweg, who found it at Retatulen, growing on the stem of the Calabash tree (Crescentia Cujete). This tree, by the way, forms a favourite haunt of Orchids, and it is on record that at one time its branches were not infrequently sent to England from the West Indies for the sake of the epiphytes with which they were infested. In 1842 a third species was described by Lindley, under the name of Lælia pedunctularis (*Bot. Reg.*, xxviii., Misc., p. 10), from a plant which flowered in the collection of George Barker, Esq., and it was afterwards figured (*l.c.*, xxxi., t. 69). Its

habitat was not recorded, but the same thing afterwards flowered at Woburn (*Bot. Mag.*, t. 4099), having been sent from Guatemala by Skinner. All three were afterwards recognised as forms of the same species. It is said to be sparingly spread over parts of Southern Mexico and Guatemala, and is so highly thought of by the inhabitants of the last-named country that they call it the *Flor de Jesus*. It has also been recently sent from Costa Rica by Tonduz, who collected in forests at Nicoya. It is somewhat variable, both in size and colour, and the best dark forms are very attractive. The form here figured is lilac coloured, with a darker throat to the lip.

As regards culture little need be said, for it succeeds under the treatment given to other Mexican Lælias. It is sometimes grown on a block but a basket or shallow pan is preferable. Strong plants are very floriferous.

CYPRIPEDIUM × WILLIAMSIANUM AND ITS ALLIES.

THE question of the origin of Cypripedium × melanophthalmum and its allies was discussed in our last volume (pp. 291, 348), and we have now received five more flowers from the collection of E. F. Clark, Esq., of Teignmouth. They are C. × melanophthalmum, a seedling from C. × Harrisianum nigrum × venustum, agreeing well with the preceding, except for the absence of warts from the petals, C. × Williamsianum, C. × Measuresianum, and another seedling form of C. × Violetta. Mr. Clark points out some resemblances between C. × Williamsianum and C. × Measuresianum—which latter was unquestionably derived from C. villosum and C. venustum, and remarks that there is no trace of C. barbatum in the flower of the former. C. × Violetta is also pointed out as near the two preceding in its flower, and this was derived from C. venustum × Sallieri. Commenting on the resemblance between the three just mentioned, and the apparent absence of C. barbatum in each case, Mr. Clark asks whether C. × Williamsianum may not have been derived from C. villosum and C. venustum, as we formerly thought? In reply we can only say that the resemblance to C. × Harrisianum in the foliage, and through it to C. barbatum, can scarcely be meaningless, while the markings on the leaves of C. Measuresianum are quite different. On the whole the evidence seems most in favour of C. × Harrisianum being one of the parents of C. × Williamsianum, and even the green veining of the dorsal sepal agrees better with C. × melanophthalmum than with C. × Measuresianum. In any case the hybrid between C. venustum and C. × Harrisianum is remarkably variable, and other forms resembling C. × Williamsianum may yet appear.

ORCHIDS IN SEASON.

SEVERAL beautiful Orchids are sent from the collection of Francis Wellesley, Esq., Westfield, Woking gr. Mr. Hopkinson. Brassolaelia × Mrs. Gratrix, Westfield var., is remarkably fine, the flowers measuring over six inches from tip to tip of the petals, with the lip proportionately developed, and very undulate and fringed. The colour is orange buff, and altogether it is a very brilliant variety. Lælio-cattleya × Miss Mary Fowler C. × Hardyana × Læl. × Gottoiana is a very large and handsome flower, most like the seed parent in shape. The sepals and petals are broad and light, salmon rose in colour, while the broad, undulate lip is rich purple, with a pair of rather small yellow eyes in the throat. Sophro-cattleya × Saxo-S. grandiflora × C. Triana is from the plant which received an Award of Merit in February, 1904, and is a charming little rose-coloured flower, most like the seed parent in shape, with a rich purple blotch on the front of the lip. Paphiopedilum × Dicksonianum villosum × Hera Lucy-dee is a handsome thing, having the centre of the dorsal sepal uniformly purple, the base green, densely spotted with brown, and the broad margin clear white, while the petals, lip, and staminode are most like those of P. villosum.

The flower of the remarkable Cypripedium × Alcibiades magnificum, to which a First-class Certificate was given by the R.H.S. on January 9th last, is sent by Major G. L. Holford, of Westonbirt, who remarks that it has very much improved since it was exhibited. The dorsal sepal is over 3¼ inches across, concave, and densely spotted with brown and purple on the lower half. The petals are 1¼ inches broad, and the flower altogether **is of exceptional development and very handsome.**

Several interesting Orchids are sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Haddon. Lælia is represented by the gigantic L. superbiens, which is considered too large for some collections, L. autumnalis, L. anceps, L. crispilabia, and the pretty little L. rubescens, which is figured on page 41. Of Odontoglossum there are the charming little O. nævium, O. luteopurpureum, and O. crispum, and of Oncidium the handsome O. splendidum, O. Warscewiczii, O. serratum, and O. maculatum. There are also a good Cattleya Percivaliana, Lycaste Skinneri, a spike of the brilliant Stenorrhynchus speciosus var. maculatus, Paphiopedilum præstans and Spicerianum, Phragmopedilum × Sedenii candidulum, the fine Angræcum superbum, and Catasetum viridi-flavum. A spike of Masdevallia melanopus is one of thirty borne by a plant in a 60-sized pot. Other interesting things are a light form of M. Schrœderiana, Epidendrum glumaceum, E. odoratissimum, and E. nocturnum, Cymbidium giganteum, the West African Eulophia lurida, and Isochilus linearis.

A twin-flowered spike of the charming little Paphiopedilum × tessellatum porphyreum, and a bloom of P. × Buchanianum magnificum. are sent from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, by Mr. Smith. There is also a six-flowered spike of the rare Dendrobium triflorum, the curious little Masdevallia melanopus, and two very distinct forms of Zygopetalum × max-Jorisii (maxillare × Jorisianum), one of which has the front lobe of the lip light yellow, and the sepals and petals much spotted, thus looking more like a hybrid than the earlier forms.

Two distinct and handsome forms of the charming little Paphiopedilum × Hitchinsiæ are sent from the collection of Captain Twiss, Birdhill House, Limerick. In one case the purple markings on the dorsal sepal consist of distinct spots, and in the other they are so numerous as to be confluent in lines, giving the lower part a rayed appearance. The latter is the larger flower, but both are very beautiful.

A good dark form of Paphiopedilum × calloso-Warneri is sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, by Mr. Rogers, together with examples of P. × nitens, P. × Euryades and P. × aureum, all raised in the collection.

HIGH CULTURE OF CALANTHE VEITCHII.

At the last meeting of the Birkenhead (Cheshire) Horticultural Society, held on January 18, Mr. Horne, gardener to Mrs. Ismay, Dawpott, gave a paper on "Calanthe Veitchii." The lecturer had a number of enormous pseudo-bulbs and lengthy racemes for the members' inspection. These specimens were pronounced by the audience to be the finest ever seen. Some of the bulbs were 14in. in length, and their girths 8½in. The inflorescences reached 4ft. 5in.; while last year Mr. Horne had some 4ft. 9in.

The lecturer, in his paper, treated on the decorative value of the Calanthe to some length, and exhausted the cultural matter so much that few questions were asked. Briefly, the cultural notes were these: Potting to be done early in March: one bulb in a five in. pot, into which crocks to a depth of 2in. only should be placed. Compost—Loam, three parts: cow manure in lumps, one part; a good sprinkling of Orport gravel or silver sand; charcoal in small pieces, and Ichthemic guano. When potting, add to the compost of each pot 3oz. of wood ashes. After the plants are well established water frequently with liquid manure made from "Clay's" "Ichthemic" and cow urine. "Clay's" is used to the extent of 1oz. to a gallon of water, and from observation of the bulbs no harm results from the exceptionally high feeding. The lecturer was accorded a hearty vote of thanks for his excellent paper.—R. G. J. in *Journal of Horticulture*, 1905, i., p. 90.

CALENDAR OF OPERATIONS FOR FEBRUARY.

By J. M. BLACK, Streatham.

WATERING PLANTS IN BUD AND FLOWER.—I was very much impressed a few weeks ago by the great difference in the colour of two flowers on the same plant, but on different leads. The plant was a Cattleya hybrid, and one lead flowered a month or six weeks before the other. In the first instance, the plant, through inadvertence, developed its bud and flowered in a very wet condition, and the flower fell far short of what was anticipated from the crass paler and watery; in the second instance, water being withheld from the plant, the bud developed in comparative dryness, and the flower was of clear and beautiful hues. It will be noticed that the experienced Orchid grower always manages to have his plants on the dry side when his flowers are expanding. He does not develop his buds in dryness, but he so regulates his watering that when the flower is open the plant appears to the untrained eye to be much in need of a good watering. This he knows instinctively to be best, although he may have some difficulty in giving dogmatic reasons for it.

Cattleyas such as Trianæ, Percivaliana, Mossiæ, Mendelii, and many hybrids, also Lælias, which finish their pseudobulbs in the autumn and rest in sheath during the winter, are liable to lose their buds when these are a little way up the sheath. Excess of moisture in the atmosphere, or water lodging at the base of the sheath, are the reasons usually advanced for this happening, but, while accepting these reasons as being sometimes the cause, it appears to me that too much water at the root at this period is more often the true reason. It is very necessary that the plant should not suffer from drought when developing its bud, but as the mode of treatment will have been conducive to its showing for flower, continue that treatment a little longer, entirely ignoring the fact that the buds are there. The buds appearing at the base of the sheath should not be regarded as a sudden appeal for more water than the plant has hitherto had, and followed by a too hasty acquiescence on the part of the grower. When the buds are half-way up the sheath, there will be much less danger of their damping. It would seem, therefore, that special care should be given to plants that are on the point of flowering, for two reasons: the first, to avoid the buds damping; and, the second, to get blooms of good colour. Shortly put, this method would be: water with some restraint when the buds appear, a little more generously as the buds advance, and again with restraint as the flowers are expanding. Plants, such as C. Gaskelliana and C. labiata, which make their pseudobulbs and throw up their flowers with but little rest in sheath, are not so sensitive with regard to the damping of their buds, but care should be taken that they do not receive a check at this

period. There are other aspects to this question which I may revert to at another time.

POTTING.—Cypripediums which have been passing out of flower during the winter may be gone through this month and potted on, divided or surfaced, according to the object in view and the condition of the compost. Large specimen plants of the choicer varieties of C. × Leeanum. C. insigne Sanderæ, C. insigne Harefield Hall var., and many more of the older, well-known good varieties, both hybrid and species, are now much more frequently seen at the R.H.S. meetings, and this is when the Cypripedium is seen at its best. Propagation has also been busy. C. insigne Sanderæ having had particular attention paid to it in this respect, and this lovely variety is perhaps now more grown than any other.

The culture of most Cypripediums, including Selenipedium, is particularly simple, and most of them are well adapted for growing in dull, town districts, although here, of course, one cannot hope to get the size and quality into the flowers which others in more favoured districts will do. I have frequently had occasion to notice in the suburbs of London that where a few Orchids are grown the Cypripediums always look best, being in a state of comparative vigour, while epiphytal species may have gone to wreck.

COMPOST.—The Cypripedium is a rather gross feeder, and a compost of one part each of good, yellow, turfy loam, fibrous peat in lumps, half-decayed oak leaves and sphagnum moss, with a good sprinkling of silver sand on broken crocks to keep the mixture open, will suit most of them. Some growers have, however, good success with peat and moss only, while others are satisfied with a leaf-soil and moss mixture, so that there need be no splitting of hairs as regards compost. In repotting vigorous plants, the old compost, if sweet, should be left, simply loosening a root here and there. The pots should be well drained, and sufficiently large to meet the requirements of the plant for two years. Plants that are sickly should have the pot room reduced to a minimum. Keep the plants a little below the rim of the pot. Spray in between the pots of newly-potted plants and otherwise keep the surroundings moist, and water with great care until the roots get a hold of the new compost. C. Charlesworthii, C. Spicerianum and allied hybrids require more warmth than C. insigne and C. × Arthurianum, which thrive very well in the Intermediate house.

MILTONIAS.—Miltonia spectabilis and its varieties, and other species of Miltonia which flowered about the same time, can be repotted as they show signs of activity, the compost being the same as recommended for Odontoglossums last month.

MASDEVALLIAS, &c.—There will be numerous Orchids of all kinds which will require repotting as the days advance, chiefly those that flowered in

the autumn and have been more or less at rest for a time. These will include many Masdevallias, Trichosma suavis, &c., which should receive attention as they show signs of quickening. Use clean receptacles and drain thoroughly, using for the larger pots chopped up fern rhizomes. Peat, moss, leaves, and sand will be found a very reliable mixture for most epiphytal Orchids which require repotting at present.

DENDROBIUMS.—**Dendrobiums will make the next big show. The D.** aureum and D. nobile crosses are showing well for flower, and we have already a few plants open, including D. × Wigganæ xanthoglossum. D. × cleasbyanum = D. × Wigganæ × D. aureum is well advanced in bud. This is the largest and deepest yellow of the D. signatum crosses. If the Dendrobiums have been subjected to cool and dry treatment, they should be gradually brought back into heat, and should now be developing their buds in a night temperature of 60°. They should be turned out and put into shape before the buds are too far advanced. If Dendrobiums are kept cold and dry during the resting period and brought suddenly into a much warmer and moister house, the flower buds are inclined to become growths; but if they are kept in a temperature of 55°-65° all the winter, little of this happens. When the variety is choice these adventitious growths are most useful for increasing the stock, and they will in a few years entirely beat the plant on which they appear. For treatment as regards watering see my **remarks on that subject in this Calendar last month.**

LÆLIA ANCEPS.—Where this species is grown in quantity it makes a brave show, and following Cattleya labiata in flower, it comes at a most opportune time, when nothing very showy is in flower to compete with it. There are a great many lovely varieties of this species, which may be regarded as the best of the Mexican Lælias, and when a suitable place can be given it, where it can receive abundance of light and air, it is of comparatively easy culture. This plant is not so extensively grown now, I think, as formerly, but, on the other hand, there are more collections where all the best varieties have been collected, and where it is probably better grown than ever it was. L. anceps is a plant which particularly shows its treatment in its flowers. Some noteworthy varieties are L. a. Schroderæ L. a. Hilliana, L. a. alba the true albino, L. a. Williamsi, L. a. Chamberlainiana, &c. They have now mostly passed out of flower, and will rest until roots appear from the new bulbs, when they can be repotted if it is **required.**

SHADING.—There is no doubt but that the wooden lath roller blinds are the best, and though the initial cost is more they are in the end the cheapest, because of their greater durability. But they must be well painted or oiled when new. It is the galvanized clips that give way first, and if a clip of a non-rustable nature, strong enough and cheap enough,

could be used instead of these, the weak point in this most excellent shading would be overcome. The fixing of these blinds is a matter of some consideration, and one which will permit of a great amount of discussion. On houses of great dimensions six inches from the glass would seem a reasonable distance to fix them, but on small houses having the plants standing well up to the glass, a foot away would not be too much. Again, where coolness as well as shade is a desideratum, even higher than a foot is to be recommended. A blind—whether of tiffany, wood, or bamboo if allowed to lie on the glass, gives shade and prevents scorching, but the glass is kept very hot, and this is most enervating to the plants, especially if they are standing close to it. I have had some experience of tiffany lying on the glass and over the top ventilators, which are practically useless in consequence, as no air can get in or out through the cloth. When the sun is shining during the summer months on a house as described, the air inside smells more like that in a super-heated mushroom-pit than anything else. For shade-loving, pseudobulbless plants, such as Phalænopsis, Angræcums, Aërides, many Vandas and Cypripediums, the tiffany blind may be recommended, as, while giving light, the direct rays of the sun never touch the leaves. But it is in the spring that shading gives the Orchid grower the most care. Imagine a beautiful, clear, sunny day, and a keen, cutting, east wind. The sun is just a little too bright to be safe, so down must come the blinds, and with them the temperatures in the houses, which must then be maintained by artificial means. We shut out the light and natural heat so much to be desired, and resort to fire heat so much to be condemned. For this absurd state of affairs there is no practical solution, for a series of blinds of different thicknesses is quite impracticable, and therefore out of the question. The question of shading is a most important one to the Orchid grower, for good blinds sensibly adjusted will make the growing conditions of a house good, while carelessness in this respect will make them bad.

TEMPERATURES.—The mean temperature in the houses this month will be considerably higher than last, as the result of the increasing strength of the sun, but the temperatures provided artificially may remain as advised last month. The general directions as to ventilating and damping given last month may also be followed, but only in their wider sense.

MISCELLANEOUS.—Such obvious work as tying-up spikes as they advance, or lowering them from the glass, as may be wanted in the case of hanging plants, such as Phalænopsis, need hardly be mentioned here. Calanthes of the deciduous section will now have nearly all passed out of flower, and will require no more water until being repotted. Plants that are coming into flower should have good positions afforded them, where they can be seen to advantage.

BRASSOCATTLEYA × EROTION.

THE annexed figure represents a charming little hybrid raised in the collection of E. V. R. Thayer, Esq., S. Lancaster, Mass., U.S.A., by Mr. E. O. Orpet, to whom we are indebted for the photograph. Its parentage is described as Cattleya Walkeriana × Brassavola glauca. Mr. Orpet writes that the flower is of a most pleasing shade of soft rose, which is uniform throughout the flower, lip and all, except that the latter is beautifully veined with radiating lines diverging from the centre to the margin. This organ is $2\frac{3}{4}$ inches long by $1\frac{3}{4}$ inches broad. The plant is naturally dwarf, as might be expected from its parentage. It is the only one raised,

Fig. 6. BRASSOCATTLEYA × EROTION.

and was eight years in flowering. The flower is sweet scented, especially in the evening. The shape, it will be observed, closely resembles that of the pollen parent, and it is curious what a close family resemblance there is between the hybrids of Brassavola glauca in this respect. Mr. Orpet has another seedling of B. glauca in flower, Cattleya Trianæ alba being the other parent, and he remarks, "strange to say the whole flower is suffused with light pink, but there was not the slightest suspicion of pink in the Cattleya used. This seedling will be a form of Brassocattleya × Orpheus.

1907

SOCIETIES.

ROYAL HORTICULTURAL.

THE opening meeting of the year was held at the Royal Horticultural Hall, Vincent Square, Westminster, on January 9th, and brought together a very fine display of Orchids. The awards consisted of seven Medals, one First-class Certificate, five Awards of Merit, one Botanical Certificate, and one Cultural Commendation. The new scheme under which Diplomas are to be awarded for particular plants also came into operation for the first time, and details of the competition are given below.

F. Menteth Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), staged an excellent group, to which a Silver Flora Medal was awarded. The more noteworthy subjects were two batches of the brilliant orange Laelio-cattleya × Charlesworthii, Sophronitis grandiflora, varieties of Lælia anceps, and Cypripedium insigne, C. × Maudiæ, and an excellent specimen of Lycaste × Balliæ, to which a Cultural Commendation was given.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), also staged a very effective group, to which a Silver Banksian Medal was given. It contained some good Odontoglossums, Calanthes and Cypripediums, including C. × Chameleon, in which the petals were striped with yellow and brown. The centre was occupied by a large pan of the pretty little Oncidium cheirophorum, bearing numbers of its graceful yellow flowers.

Major C. L. Holford, C.I.E., Westonbirt (gr. Mr. Alexander), received a First-class Certificate for Cypripedium × Alcibiades magnificum (× Leeanum giganteum × Mons. de Curte), a noble form, having the dorsal sepal white, with a green base and numerous rows of purple dots, and the petals and lip yellow tinged and marked with brown.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cattleya Trianæ Wellesleyæ, a pretty white form with six blooms, Cypripedium × Tracyanum, the beautiful C. × Ville de Paris with four blooms, C. × memoria Jerninghamiæ, &c. Awards of Merit were given to C. × Bella Westfield var. (× vexillarium × philippinense), richer in colour than the original form of which a cut spike was also shown, and to Lælio-cattleya × Helena Westfield var. (L. cinnabarina × C. Schilleriana), a handsome form, having rich, orange-coloured flowers, veined with purple on the lip.

Sir H. Trevor Lawrence, Bart., Burford (gr. Mr. White), sent Masdevallia badium luteum, a species of Schlimmia, and Catasetum × splendens pun tatissimum, the latter receiving an Award of Merit. It had the sepals and petals densely spotted with purple on a whitish ground, and the lip yellow.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), sent Lælio-

cattleya × Mrs. Ernest Bourdis, with bright rosy purple flowers, Cypripedium × Niobe superbum, C. × Nellie Goodson, and Brassavola glauca, the latter receiving a Botanical Certificate.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Chapman), showed Cattleya × Chapmanii (× Hardyana Oakwood variety × Trianæ).

H. J. Elwes, Esq., Colesborne Park (gr. Mr. Walters), sent the remarkable Bonatea speciosa, and a fine plant of Pleione humilis.

J. Gurney Fowler, Esq., South Woodford (gr. Mr. Davis), sent Cypripedium × Actæus langleyense, C. × Mr. William Mostyn, Chardwar var., C. × Milo, Coob's var., and four good forms of C. × aureum.

H. D. Headland, Esq., Balham, sent Cypripedium × Headlandianum (× Lathamianum × memoria-Moensii).

A. L. Wigan, Esq., Forest Park, Windsor, showed Cypripedium × Joyce.

Messrs. Sander & Sons, St. Albans, staged a fine group, to which a Silver Flora Medal was given. Among noteworthy plants which it contained were the rare Maxillaria elegantula, Lælia × Finckeniana alba, hybrid Epidendrums, and a fine lot of Cypripediums, including twenty varieties of C. insigne, C. × The Marchioness (× Almos × Leeanum), C. × The Duchess (insigne Bohnhofianum × aureum), and C. × Earl of Tankerville (exul × nitens Sander's var.), an Award of Merit being given to the latter. It is of good form and substance, the dorsal sepal white with an emerald green base, blotched with purple-brown, becoming purple upwards, and the petals and lip yellowish more or less marbled with brown.

Messrs. J. Cypher & Sons, Cheltenham, also received a Silver Flora Medal for a very fine group, containing some good forms of Lælia anceps, Odontoglossums Hallii, × Adrianæ and crispum, Masdevallia Heathii, M. Schrœderiana, a fine specimen of Cypripedium × Arthurianum with twenty-five flowers, C. × Leeanum giganteum with sixteen, C. × L. Cypher's var., C. × Charlesianum Cypher's var., and other good things.

Messrs. Hugh Low & Co., Enfield, staged a good group, to which a Silver Banksian Medal was given, the more noteworthy plants being Bulbophyllum Dearei, a fine Dendrobium aureum, Lælia albida, Vanda Amesiana, Masdevallias, Cypripedium villosum auriferum, and others.

Messrs. Stanley & Co., Southgate, also received a Silver Banksian Medal for a bright and pretty group, containing some good Odontoglossum crispum, O. × loochristiense, Cattleya Trianæ alba, and a coloured form near C. T. Backhouseana, Lælia anceps Amesiana, some good Masdevallias, Cypripediums, and others.

Messrs. James Veitch & Sons, Chelsea, exhibited Brasso-cattleya × Pyrrha (B. glauca × C. labiata), a pretty dwarf hybrid, bearing a large, fragrant, bright rose-coloured flower, which gained an Award of Merit.

M. Ch. Vuylsteke, Loochristi, Ghent, also received a Silver Banksian Medal for a charming little group of Odontoglossums, the most noteworthy being O. × amabile and O. × Vuylstekei, with two fine O. × ardentissimum and three O. × loochristiense.

Messrs. William Bull & Sons, Chelsea, sent the charming little Sophrocattleya × Doris (S. grandiflora × C. Dowiana), and two other hybrids.

DIPLOMA COMPETITIONS.

THIS was the first of the series of competitions designed to bring out the best forms of existing species and hybrids in addition to novelties. The subjects selected for this meeting were coloured varieties of Lælia anceps, and species and hybrids of Calanthe, some interesting exhibits being staged under each. The Societies paintings bearing on the subject were also shown, and thus provided very interesting matter for comparison.

Varieties of Lælia anceps were sent by Major G. L. Holford, De Barri Crawshay, Esq., Francis Wellesley, Esq., Messrs. McBean and Sons, and others, and the best forms shown were L. a. Schroederæ, Raymond Crawshay, Lionel Crawshay and Theodora.

Calanthes mustered in strong force, the group staged by Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Chapman), being a particularly fine one. It consisted for the most part of hybrids raised at Oakwood, showing a range in colour from white to the deepest rosy crimson, the richest in colour being the brilliant C. × Chapmanii. Other fine things were C. × Sedeni lactea, C. × Bryan, C. × Wm. Murray, C. × Victoria, C. × Phœbe, C. × atrorubens, C. × Sibyl, &c. Another fine group was staged by Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), also showing great variation in colour, and including varieties of C. vestita and C. × Veitchiana, C. × Sandhurstiana, C. × Alpha, &c. The awards were as follows:—

SPECIES.—First Diploma, to Calanthe vestita nigro-oculata gigantea, a strong growing plant, having large white flowers with a reddish crimson eye, exhibited by N. C. Cookson, Esq.

HYBRIDS.—First Diploma to Calanthe × Harrisii, a pure white form shown by N. C. Cookson, Esq. Second Diploma to C. × Veitchii, the original hybrid of the deciduous group, and still unsurpassed for general cultivation, on account of its robust habit and floriferousness.

At the meeting held on January 23rd there was again a very fine display of Orchids, in spite of the frost and fog which prevailed outside, though there was not much in the way of novelty. The awards consisted of seven medals and three Awards of Merit, but curiously enough there was not a single exhibit in the special competition for Odontoglossums, which would suggest that an unsuitable date has been chosen for this particular genus.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), staged a very fine group, to which a Silver-gilt Flora Medal was given. Among the more noteworthy Orchids staged we observed a fine pan of Sophronitis grandiflora bearing about forty flowers, said to be one of the plants from Mr. Day's collection, numerous forms of Lælia anceps, white and coloured, the rare L. rubescens, L. × flammea, the first of the L. cinnabarina hybrids, a fine specimen of Cattleya Percivaliana with fourteen flowers, the handsome C. Trianæ Schroederiana, and C. T. Russelliana, the latter from the old collection of Provost Russel, of Falkirk, Odontoglossum × elegans, Eastwood Park var., a fine O. Uroskinneri album, O. × Harryano-crispum, a yellow O. crispum, two good Dendrobium bigibbum, a fine example of Restrepia maculata, the white Calanthe × Harrisii, three plants of Cypripedium insigne Sanderianum, the best with nine flowers, C. × Dee Imanianum, C. × Maudiæ, C. × Lathamianum with fifteen flowers, C. × Leeanum superbum with ten, C. Mastersianum, &c.

R. Briggs-Bury, Esq., Bank House, Accrington (gr. Mr. Wilkinson), received a Silver Banksian Medal for a choice group, containing a fine Odontoglossum × ardentissimum, the handsomely blotched O. crispum Mrs. F. Peeters, three good examples of Cypripedium × Beckmann, C. × Parkerianum, C. × Lathamianum Thompsoni, and two good C. × Maudiæ.

G. F. Moore, Esq., Bourton-on-the-Water (gr. Mr. Page), obtained an Award of Merit for Cypripedium × Bridgei (C. × Godseffianum × Argus Moensin), a handsome hybrid, showing much of the C. hirsutissimum character, the petals being purple at the apex, and green spotted with black at the base, while the dorsal sepal is densely spotted with blackish except at the white margin.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), sent a fine form of Cattleya Trianæ called Harefield Goliath.

J. Gurney Fowler, Esq., S. Woodford (gr. Mr. Davis), sent Cypripedium × aureum Hyeanum.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), sent Cypripedium × Buchanianum magnificum, and Zygopetalum × Max-Jorisi, having green sepals and petals blotched with dark brown, and a yellowish white lip.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Brassolælia × Mrs. Gratrix, Westfield var., a remarkably fine form, Cypripedium × Dicksonianum (villosum × Hera Euryades), a large and handsome hybrid, C. × aureum, Westfield var., C. × Cecil Dickson, C. × Niobe × Leeanum, and Lælio-cattleya × Miss Mary Froude, tinted with light rose and the front of the lip reddish purple.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a very fine group, to which a Silver-gilt Flora Medal was given. The most prominent

feature was about eighty plants of the rich orange-coloured Lælio-cattleya × Charlesworthii (L. cinnabarina × C. Dowiana aurea), profusely flowered, and presenting a brilliant sight. Other noteworthy things were L.-c. × Andromeda, L.-c. × Prospero, Odontoglossum × Rolfeæ, the richly-coloured O. × Harryano-triumphans, O. × Harryano-crispum, and four plants of the beautiful Cattleya × Octave Doin, Mendelii × Dowiana aurea, having blush pink sepals and petals, becoming light rose at the margin of the latter, and the lip ruby crimson veined with yellow. To this an Award of Merit was given.

Messrs. James Cypher and Sons, Cheltenham, also received a Silver-gilt Flora Medal for a fine group, containing some good Cattleya Trianæ, a fine lot of Lælia anceps varieties, white and coloured, Lælio-cattleya × Lydia, Odontoglossum grande, Dendrobium × enosmum, Masdevallia × Hacksiana, M. × Heathii, Lycaste Skinneri, and a lot of good Cypripediums, specially noteworthy being C. × villexul, C. × triumphans, C. × Deedmanianum, C. × Lathamianum Thompsoni, C. × aureum virginale, C. × Charlesianum, Cypher's var., and C. × Cleopatra, with some good C. × Leeanum and C. insigne.

Messrs. Sander and Sons, St. Albans, received a Silver Flora Medal for the group, including Cymbidium Traceyanum, C. × Balhamum, Vanda Watsoni, a form of V. cærulea having nearly white sepals and petals, and a purple-blue lip, a good Angræcum sesquipedale, the rare Galeandra lacustris, Epidendrum cochleatum, a spotted form of Oncidium Cavendishianum, Odontoglossum crispum, a fine O. × Adriana, O. odoratum, some some good Calanthes, and a fine selection of Cypripediums. An Award of Merit was given to a good form of Phaius maculatus

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a bright and pretty group, including three good plants of Vanda Amesiana, the remarkable Pleurothallis Roezlii, and a good lot of Cypripediums, of which the most remarkable was C. × calloso-Charlesworthii, having the flower rich ruby red almost throughout. The densely spotted C. × Adrastus Mariæ, a dark C. × Hera, C. × Mrs. William Mostyn Chardwar var., the delicately tinted C. × Venus, and varieties of C. × aureum were also noteworthy.

M. Ch. Vuylsteke, Loochristi, Ghent, received a Silver Banksian Medal for a group of choice Odontoglossums, including two beautiful examples of O. × ardentissimum, a fine O. × Wiganianum, O. × Rolfeæ, a fine O. × Vuylstekei, O. × amabile, a form of O. × Vuylstekeæ very different from the original, though out of the same capsule, O. × Harryano-crispum, and a fine O. × Wilckeanum.

Messrs. William Bull & Sons, Chelsea, sent the brilliant little Sophro-cattleya × Doris, and a good Dendrobium × Wigania xanthochilum.

Messrs. Heath & Son, Cheltenham, showed a group of hybrid Cypripediums, noteworthy among them being the pretty little C. × Dowlingianum, C. × Daphne, C. × Fred Hardy, and a very fine example of C. × Parkerianum (Boxallii × nitens), having the villosum character very prominent in the petals and lip.

Messrs. Stanley & Son, Southgate, staged a small group, including a good Odontoglossum × loochristense with fourteen flowers, Laeliocattleya × Adolphus, Cypripedium × Lecanum grandisepalum, and others.

Messrs. James Veitch & Sons, Chelsea, sent Brassocattleya × Orpheus rosea.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on December 21st, 1905, and brought together a fair display of plants.

G. W. Law Schofield, Esq., Rawtenstall (gr. Mr. Shill), staged a choice group of Cypripediums, to which a Silver Medal was given, one of the most noteworthy plants being C. × Thompsonianum in excellent condition. Awards of Merit were given to C. × aureum var. Cyris and C. × Stottianum, the latter derived from C. × Lathamianum × C. insigne Sanderæ.

R. Ashworth, Esq., Newchurch (gr. Mr. Padley), obtained a First-class Certificate for Cypripedium × burgleyense var. Lucas.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), also received a First-class Certificate for Cypripedium × Leeanum var. Gratrixiæ, a particularly fine form.

O. O. Wrigley, Esq., Bury (gr. Mr. Rogers), received an Award of Merit for Cypripedium insigne var. Clinkaberryanum.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a choice group of hybrids, to which a Silver Medal was given.

Messrs. A. J. Keeling & Sons, Bradford, received a Bronze Medal for an interesting group, and an Award of Merit for Cypripedium insigne var. confusum.

Votes of Thanks were also accorded to Messrs. Sander & Sons, St. Albans, Mr. J. Robson, Altrincham, Mr. D. McLeod, Chorlton-cum-Hardy, and Mr. H. H. Clegg, Prestwich, for interesting exhibits.

At the meeting held on January 11th, 1906, there was again a good display of plants.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), staged a fine group, chiefly of Cypripediums, which gained a Silver-gilt Medal. An Award of Merit was given to Cypripedium × Edmond Lord.

E. Ashworth, Esq., Wilmslow (gr. Mr. Holbrook), staged a good group of Lælia anceps varieties, to which a Silver Medal was given.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Smith), sent several good plants, including Cypripedium × Winston Churchill, a supposed hybrid between C. insigne and C. × Sallieri Hyeanum (First-class Certificate), and C. × luminosum (Award of Merit).

O. O. Wrigley, Esq., Bury (gr. Mr. Rogers), also received a Vote of Thanks for a good group of Cypripediums, and Awards of Merit for C. × Lathamianum Wrigley's var., C. × Ajax, and C. × Kitty.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), was accorded a Vote of Thanks for a small group of Cypripediums, including C. × Victor, a good form of C. × aureum, and C. × Germaine Opoix, an Award of Merit being given to the latter.

Messrs. Charlesworth & Co., Bradford, staged a beautiful group of Odontoglossums, Lælio-cattleyas, Cypripediums, &c. Awards of Merit were given to Brassolælia × Mrs. Gratrix var. magnifica and Lælio-cattleya × Weilsiana.

Votes of Thanks were accorded to M. Ch. Vuylsteke, Mr. D. McLeod, Messrs. A. J. Keeling & Sons, Messrs. Hugh Low & Co., and Messrs. Stanley & Co. for interesting exhibits.

AT the meeting held on January 25th there was once more a fine display.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), staged a fine group of Odontoglossums and Cypripediums, which gained a Silver Medal. An Award of Merit was given to Cypripedium × Euryades Low's var.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), received First-class Certificates for Cypripedium × Mrs. Mostyn, Chardwar var. and C. × Watsonianum.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), received Awards of Merit for Cypripedium × Rex and C. × Headlandianum.

E. Ashworth, Esq., Wilmslow (gr. Mr. Holbrook), received an Award of Merit for Cattleya Trianæ var. Harefield Goliath, a very fine form.

Messrs. Cypher & Sons, Cheltenham, staged a very fine group, to which a Silver-gilt Medal was awarded. An Award of Merit was given to Cypripedium × villexul.

M. Ch. Vuylsteke, Ghent, received a Silver Medal for a choice group of Odontoglossums, including some distinct forms of O. × ardentissimum and the fine O. × Wiganianum, the latter gaining an Award of Merit.

Messrs. Charlesworth & Co., Bradford, received a Bronze Medal for a small select group of Odontoglossums and Lælio-cattleyas.

Messrs. Hugh Low & Co., Enfield, received an Award of Merit for Cypripedium × Venus, Low's var.

Messrs. H. J. Craven and A. J. Keeling & Sons also received Votes of Thanks for interesting exhibits.

ODONTOGLOSSUM × LAMBEAUIANUM VAR. EXQUISITUM.

ODONTOGLOSSUM Lambeauianum is a handsome hybrid raised in the establishment of M. A. A. Peeters, Brussels, between O. crispum Madame Falcke ♀ and O. × Rolfeæ var. ardentissimum ♂, and dedicated to M. Firmin Lambeau, of Brussels (Crawshay in *Gard. Chron.*, 1905, ii., p. 324, fig. 126). The cross was made in May, 1901, the seed sown thirteen months later, and the first plant flowered in March, 1905. It is a handsome thing, having short, broad segments, and a white ground colour, more or less suffused with rose on the sepals, and neatly blotched with

Fig. 6. ODONTOGLOSSUM × LAMBEAUIANUM VAR. EXQUISITUM.

red-brown. The variety exquisitum, here figured, is from the same batch, and was exhibited by M. Peeters at a meeting of the Ghent Chambre Syndicale in November last (Crawshay, *l.c.*, p. 434, fig. 102). We have received a photograph of each form, but as the flower of the type was beginning to fade when the photograph was taken we have not reproduced it. The variety has longer segments than the type, and more copious much larger blotches, while the lip is more like O. × Rolfeæ, both in shape

and spotting. The ground colour of the flower is creamy white, somewhat stained with purple on the sepals, and the markings are rich purple-brown, with the crest of the lip yellow. In the type the crispum influence preponderates, but in the variety the characters of O. Harryanum are the most obvious. Both are fine acquisitions, but the variety is exceptionally handsome, and M. Peeters must be congratulated on his success.

The pollen parent which must not be confused with O. × ardentissimum is the handsome form for which M. Vuylsteke received an Award of Merit at the Temple Show in 1900, being afterwards purchased by M. Peeters.

ORCHIDS AT KEW.

NUMEROUS interesting and beautiful Orchids are now flowering in the Kew collection, among the most conspicuous being Lælia autumnalis and L. anceps, which, through the absence of fog, have considerably brightened and added to the attraction of the Cattleya house, during the last few weeks, by the continual succession of bloom. Having such long, slender stems, and varying so much in their beautiful shades of colour, it is no wonder that they are so eagerly sought after for decorative purposes. A good plant of L. anceps Sanderiana is also bearing some well-formed flowers. Suspended from the roof in the same house, and flowering freely, are two little gems, Dendrobium moniliforme and its variety variegatum, also the rare Epidendrum polybulbon, whilst close by, and contrasting in colour, is the pure white E. chioneum. Plants of Xylobium corrugatum, Gomeza Barkeri, and the curious little Scaphyglottis prolifera are also in flower, along with Oncidium porrigens, which has a spike from four to five feet in length, covered with numerous small brown flowers.

In the Warm house several familiar Orchids are making their annual appearance, among the foremost being **Cynorchis Lowiana, a native of** Madagascar, which is producing its delicate rose-pink flowers quite freely. Near by are the rare Epidendrum Endresii and the hybrid E. × Endreso-Wallisii, which cannot be compared to its parent, either in general appearance, or in the delicate shades of colour which makes E. Endresii so **valuable. There are also E. fragrans, the equally sweet-scented E.** Allemanii, E. ciliare, and E. umbellatum, with its curious fleshy green flowers. Other interesting, though not gorgeous, things are two pans of Tania penangiana, the rare T. viridi-fusca, **Platyclinis cucumerina,** Cœlogyne graminifolia, Brassavola Martiani, Cirropetalum maculosum, Eria stricta, and E. amica, the latter having flowers of a rather disagreeable smell. A few Dendrobiums in flower are, D. × Andromeda, D. × Cassiope, D. × dulce, D. × cuosmum, the primrose-coloured D. luteolum,

and the curious D. capituliflorum. There are also several good spikes of Calanthe × Veitchii.

Among the Paphiopedilums are several which are flowering very freely, among the species being P. Appletonianum, P. Bullenianum, P. virens, P. Chamberlainianum, and P. Victoria-Mariæ. Among the hybrids are P. [illegible]siamense, P. × nitens, P. × Ashburtonæ, P. × chloroneurum, P. × Dauthieri, P. × Leeanum superbum, P. × Fitchianum, P. × Williamsianum, P. × marmorophyllum, P. × Lubbersii, P. × Elinor, and P. × Enyades. Flowering in the same house is that general old favourite Angræcum sesquipedale, bearing seven good-sized flowers, with spurs quite a foot in length, and for companions there are Listrostachy odoratissima, which fills the whole house with its strong odour, also L. hamata, with its curious hooked spurs. A good plant of Vanda Amesiana is carrying four large spikes of flowers, while Saccolabium giganteum, S. violaceum, and the charming little S. bellinum are also in bloom. Several Phalaenopsis are also in flower, including P. Lueddemanniana, P. Stuartiana, P. Schilleriana, P. denticulata, P. gloriosa, and P. rosea.

In the Cool house some eight pans of P. insigne are making a good display, each averaging from thirty to forty flowers, while among the Odontoglossums are several good spikes, including O. Uroskinneri, O. retusum, O. × waltonense, O. Insleayi, O. bictonense, O. crispums, O. × Halli-crispums, and two or three little pans of O. Rossi and O. Cervantesii. These latter are suspended from the roof, with Sophronitis violacea and several pans of S. grandiflora. A plant of Zygopetalum Mackayi, with its pale blue flowers, makes rather a contrast in colour against the white form of Odontoglossum crispum. Near by are the Masdevallias, of which just now M. tovarensis is the leader, with its pure white flowers. Others are M. abbreviata, M. polysticta, M. caloptera, M. ignea, M. melanopus, M. fulvescens, M. × chelsoni, M. Forgetiana, and M. × Rushtoni. Mingled with these are Stelis tristyla, S. Rodigasiana, Scaphosepalum ochthodes, Restrepia striata, and two good plants of Pleurothallis Roezlii with numerous racemes. Lastly, there are three little pans of the South African Cynorchis compacta, bearing numerous racemes of pure white flowers. It grows best in the cool pit, requiring no more heat than a Masdevallia. One may add, in conclusion, that a list of the species and hybrids in flower at this period numbers over a hundred.

A BOTANICAL CORNER.—It may be interesting to mention that for some time a shelf over the back of the water tank in the Warm house has been utilised for the display of rare botanical species in flower, and is always occupied by an interesting group, mostly of rarities.

THE HYBRIDIST.

BRASSOLÆLIA × LELIEUXII.—A distinct and striking hybrid has been sent by M. Ch. Maron, Brunoy, France, under the name of Brassolælia × Lelieuxii, with the record of parentage, Lælia anceps × Brassavola Digbyana. It was exhibited at a meeting of the Société Nationale d'Horticulture de France, held on January 25th. The plant most resembles L. anceps in habit, but the inflorescence is much dwarfed, being reduced to under six inches long, but clothed with about seven closely imbricating equitant bracts, clearly modified forms of those seen in the Lælia parent. They are, however, not glutinous, as in that. From the apex two flowers are exserted, most resembling those of the Lælia parent, except in having the petals somewhat narrowed, and three and a quarter inches long. The colour of the flower is blush pink, rather brighter towards the tips of all the segments. The lip is markedly three-lobed, neatly denticulate to the outer angle of the side lobes, and has a light yellow disc, with red-purple radiating lines at the base on either side. It is a very interesting addition, and bears **the most unmistakable stamp of its origin.**

It will doubtless be noticed that this plant is of identical parentage with one mentioned by M. F. Denis at page 28, and, by the way, M. Denis writes to say that an error crept into his letter. The date of sowing was May, 1901, not "1903," and the plant flowered when four years and four months old. We hope M. Maron will forward us particulars of his plant.

ORCHIDS FROM LIVERPOOL.

SEVERAL interesting flowers are sent from the collection of Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz). Paphiopedilum × illustre var. Youngii (× Sallieri ♀ × Lathamianum ♂) has a white dorsal sepal, suffused with yellow up the centre, and prettily spotted with brown and purple, while the petals, lip and staminode closely resemble P. villosum. A seedling from P. × Lathamianum ♀ and P. Boxallii atratum ♂ is most like the latter in colour, though not equal to it in point of merit. It appears to be a form of P. × Valleti (*Chron. Orch.*, II., p. 58).

P. × RHESUS (P. × Winnianum × P. × Harrisianum superbum ♂) is a deep purple-brown, very shining flower, most like the seed parent in colour, but with relatively very short and broad petals and dorsal sepal which have also a deeper band up the centre. The seed was sown in December, 1899. It is curious to note that a hybrid between P. villosum and P. × orphanum would give the same analysis of parentage.

P. × SERAPHIS (P. × Orpheus Youngianum ? × P. ænanthum superbum ♂) is another richly coloured flower, the segments being purple-brown, with numerous brown blotches on the dorsal sepal and a white

apex, thus most resembling the seed parent. The seed was sown in October, 1897. The preceding were all raised in the collection.

A brightly-coloured Lælio-cattleya, purchased as L.-c. × Pallas, is also sent, but we should suggest that it may be a form of L.-c. × Gottoiana, or one of the allied L. tenebrosa hybrids.

ODONTOGLOSSUM PLATYCHILUM.

THE mystery about this handsome Odontoglossum is at last cleared up. It appeared at a meeting of the R.H.S. on March 22nd, 1892, and was thus recorded :—" R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Simpkins), sent a curious and pretty supposed new species of Odontoglossum with white flowers, the lip handsomely marked with bright ros." (*Gard. Chron.*, 1893, i., p. 408). Mr. Simpkins wrote: "The Orchid Committee at the Drill Hall yesterday gave me an Award of Merit for an Odontoglossum sp. unknown, and desired me to bring or send the plant to Kew for you to decide a name for it, if new or otherwise. The plant has only two bulbs with leaves, and two flowers on the spike." The plant was afterwards brought down, and I could find nothing like it, hence the name O. platychilum was proposed. Nothing was known of its origin except that it was purchased by Mr. Measures out of an odd lot when the Downside collection was sold. Thus it had been in cultivation five or six years at least before it flowered. In describing it, I suggested that it appeared to be most allied to the Guatemalan O. stellatum, Lindl., and evidently belonged to the Central American group of species (*Gard. Chron.*, 1892, ii., p. 351). Previous to this, however, a figure and description by Mr. J. Weathers had appeared (*l.c.*, i., p. 587, fig. 84). Upwards of thirteen years elapsed without further information respecting the species, when I recognised it among some undetermined Central American Orchids in the collection of Oakes Ames, Esq., in a collection distributed by J. Donnell Smith. It was collected by Heyde and Lux, at Chul, in the Department of Quiche, Guatemala, at an altitude of 2,600 mètres, in April, 1892. This specimen proved identical with a fruiting specimen collected by Bernoulli in Guatemala in May, 1860, which had previously been indeterminable (Odontoglossum sp., *Hemsl. Biol. Centr. Amer.*, Bot., iii., p. 278). It is interesting to be able thus to clear up the history of the species, but I fear it is now lost to cultivation, nothing having been heard of it for a considerable period. It is a beautiful species, and remarkable for its broad white lip being regularly spotted with purple, while the sepals and petals are also white. It would be interesting if someone could secure an importation of the species.

R. A. ROLFE.

NOTES.

THE next meeting of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on February 13th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. The Annual General Meeting will be held at 3 p.m. on the same day.

The subjects selected for the special competition for Diplomas on this date are, Cypripedium villosum and C. Boxallii, with their hybrids, white varieties of Lælia anceps, and Cattleya Trianæ with its hybrids, and these, weather permitting, should furnish materials for a fine display.

The Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on February 8th and 22nd. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

The last issue of M. Goossens' useful little *Dictionnaire Iconographique des Orchidées* contains figures of the following Orchids:—Barkeria spectabilis, Cattleya × Mlle. Marie Henriette de Wavrin, C. × triumphans var. C. Maron, Cymbidium sinense, Cypripedium Fairrieanum, Epidendrum aromaticum, Lælia DeGeestiana, L. × Eng. Bollett, Lælio-cattleya × Ernesti, Lycaste Deppei, Odontoglossum cordatum, Oncidium graminifolium and Stanhopea oculata.

We have received the first number of the *Garden Album and Review*, an illustrated monthly Magazine of Horticulture, edited by Mr. John Weathers, and containing four excellent coloured plates of garden plants, with a variety of other interesting matters. We note also a photographic illustration of Odontoglossum × Smithii with sketches of Disa pulchra and Lælio-cattleya × epicasta, Gatton Park var., together with notes on new Orchids and an Index to the most important articles and illustrations in various periodicals. The work is to be devoted to Gardening in all its branches, and is published by Messrs. Simpkin, Marshall & Co., at 7d. monthly. We wish our new contemporary every success.

We are informed that Mr. W. Mansell (for the last twelve years with Messrs. Charlesworth & Co.,) has taken over the management of Messrs. J. W. Moore, Ltd., of Rawdon, near Leeds, also a principal portion of the shares in the concern, and will continue to carry on the business as Orchid importers, &c.

Recent issues of *Die Gartenwelt* contain an account of the establishment of Herr Theodor Frank, of Magdeburg, accompanied by numerous figures, both of the houses and their contents.

A painting of a light yellow form of Paphiopedilum × Fowleræ, called var. Graham L. Wilson, grown in the collection of Mrs. G. B. Wilson, of Philadelphia, U.S.A. (gr. Mr. E. Bond), is sent through Messrs. Sander & Sons. It was derived from P. Chamberlainianum and P. insigne Sanderæ, and was purchased some years ago from Mr. Corning, from the celebrated Corning collection. It is described as free flowering, the spike being about a foot long, and bearing three to four flowers. It conforms to the type in shape, but the ground colour of the flower is light yellow.

A photograph of a curious freak is sent by Mr. J. McCartney, of Bolton. It represents a Cattleya, apparently C. Triange, which was purchased at the late Stand Hall Sale as an unflowered plant. Mr. McCartney writes:—"Shortly after it commenced to make what seemed to be a strong break, but when about an inch in length I was surprised to see a bud forming, which eventually developed into the flower, as photographed. It was fully seven inches across, and was in no way deformed." It appears to be due to a very curious arrest of the vegetative organs, and will probably not be repeated on the second growth.

A recent issue of the *Gardening World* contains (p. 40) an account of the varieties of Cypripedium insigne in the collection of G. F. Moore, Esq., Chardwar, Bourton-on-the-Water, together with a figure of one of the houses. The *Gardeners' Magazine* p. 43 has also an account of the same collection, and remarks that Mr. Moore has the greatest number of C. insigne varieties of any collection in the United Kingdom or in the world.

ORCHID PORTRAITS.

BRASSAVOLA DIGBYANA.—*Gartenwelt.* x., p, 20, with fig.

CATTLEYA × MINUCIA.—*Gartenwelt*, x., p. 190, with fig.

CATTLEYA × WILDONIENSIS.—*Gartenwelt*, x., p. 190, with fig.

COELOGYNE OCELLATA MAXIMA.—*Journ. Hort.*, 1906, i., p. 25, with fig.

CYNORCHIS COMPACTA, Rchb. f.—*Bot. Mag.*, t. 8053.

CYPRIPEDIUM × ALBOPURPUREUM.—*Journ. Hort.*, 1906, i., p. 69, with fig.

CYPRIPEDIUM × ALCIBIADES MAGNIFICUM.—*Gard. Chron.*, 1906, i., p. 52, fig. 27; *Gard. Mag.*, 1906, p. 55, with fig.; *Garden.* 1906, i., p. 55, with fig.

CYPRIPEDIUM CAUDATUM.—*Journ. Hort.*, 1906, i., p. 90, with fig.

CYPRIPEDIUM × F. H. CANN.—*Gard. Mag.*, 1906, pp. 43, 44, with fig.

CYPRIPEDIUM INSIGNE SYLHETENSE GIGANTEUM. *Gard. Mag.*, 1906, p. 41, with fig.

LELIO-CATTLEYA × EPICASTA, GATTON PARK VAR. *Gard. Alb.*, 1906, p. 15, with fig.

CYPRIPEDIUM × TESSELLATUM RUBENS. *Gard. Chron.*, 1906, i., p. 19, fig. 13.

CYPRIPEDIUM × THALIA VAR. MRS. FRANCIS WELLESLEY.—*Gard. Chron.*, 1906, i., p. 5, fig. 2; *Garden*, 1906, i., p. 9, with fig.

DENDROBIUM DENSIFLORUM ALBOLUTEUM.—*Gard. World*, 1906, p. 49, with fig.

DENDROBIUM FORMOSUM GIGANTEUM.—*Gartenwelt*, x., pp. 174, 175, with fig.

DENDROBIUM PHALÆNOPSIS VAR. LOUISA DEANE.—*Journ. Hort.*, 1906, i., p. 90, with fig.

DISA PULCHRA TRING PARK VAR.—*Journ. Hort.*, 1906, i., p. 3, with fig.: *Gard. Album*, 1906, p. 14, with fig.

EPICATTLEYA × MAGDEBURGENSIS.—*Gartenwelt*, x., p. 200, with fig.

ODONTOGLOSSUM × SMITHII.—*Gard. Album*, 1906, p. 12, with fig.

ODONTOGLOSSUM × WILCKEANUM SCHROEDERIANUM. *Garden*, 1906, i., p. 23, with fig.

STANHOPEA × WOLTERIANA. *Gartenwelt*, x., p. 200, with fig.

CORRESPONDENCE.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily.)

S. A.—1 and 2 appear to be Calanthe vestita rubro oculata. 3 and 4 have also the vestita shape with more purple on the lip. They may be forms of this species or hybrids. You do not say if they are seedlings, or if the pseudobulbs are constructed in the middle. 5 is Masdevallia gnea. 6 and 7 we take to be forms of Paphiopedilum Bullenianum, as figured at page 17 of our last issue. We have previously met with the plant under the name you mention and should like to know where the importation came from.

E. R.—1 is clearly another form of Paphiopedilum × aureum, and its resemblance to the one marked "Sallieri Hyeanum × Spicerianum" is very close. 2 is described from P. villosum or one of its hybrids, but we cannot trace its origin. Presumably the other parent had tessellated leaves. That labelled "Leeanum × entieldense" is rather puzzling, as the dorsal sepal and base of the petals are regularly blotched with brown. It is a promising seedling, but the parentage requires confirmation.

H. L.—Not yet to hand.

R. M. P.—Seeds duly received, with thanks. We will report any success later.

Photographs received, with thanks. E. O. O., H.R., J. McC.

Catalogue received. We have received the illustrated Catalogue of Orchids for 1906, issued by Messrs. Charlesworth & Co., Heaton, Bradford, containing a fine series of species and hybrids, with prices, and descriptions of some of the more recent.

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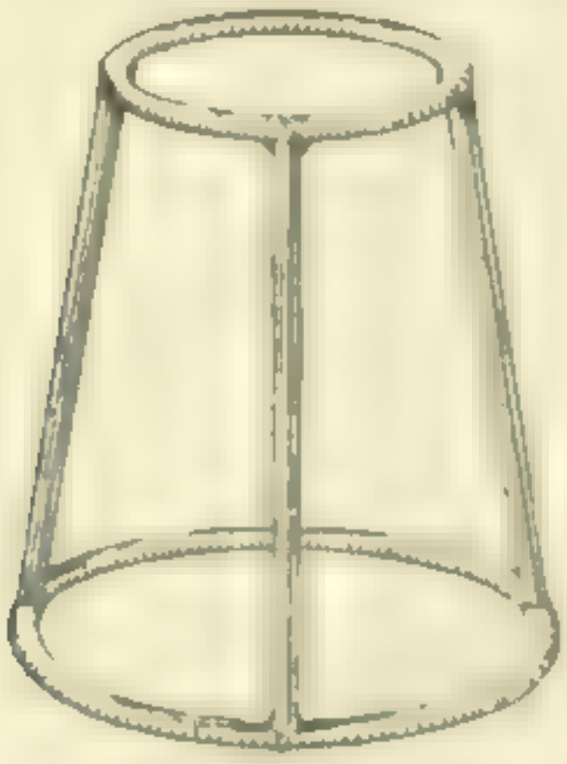

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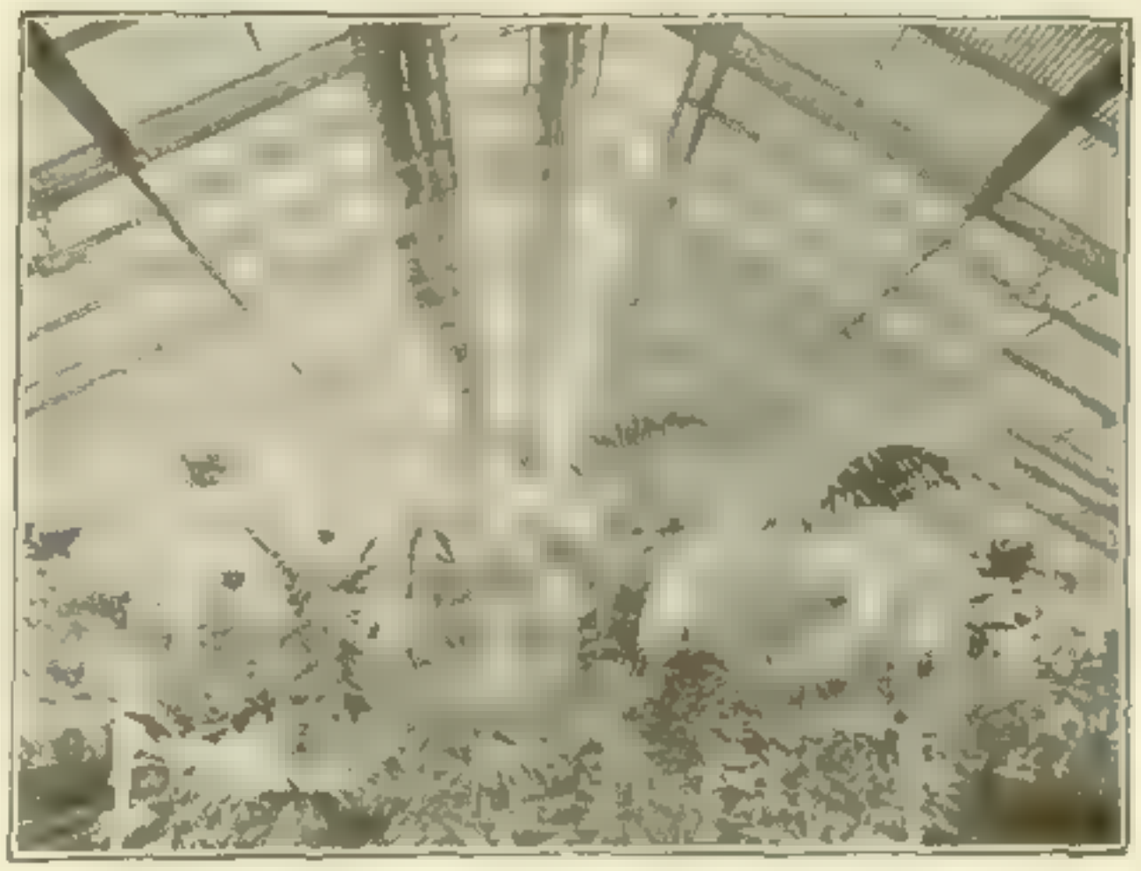

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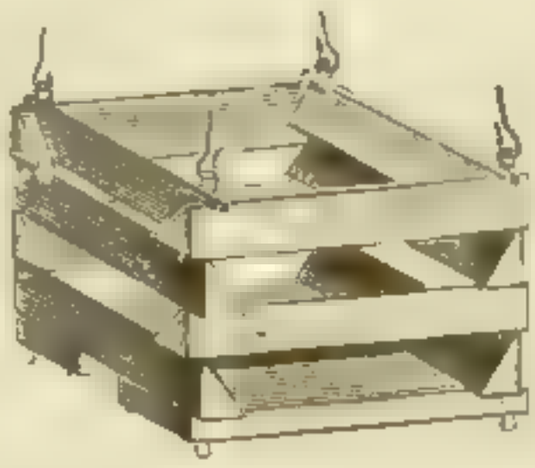

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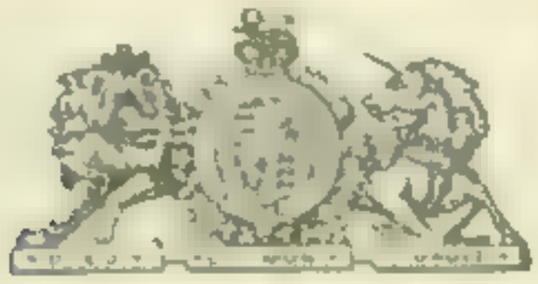

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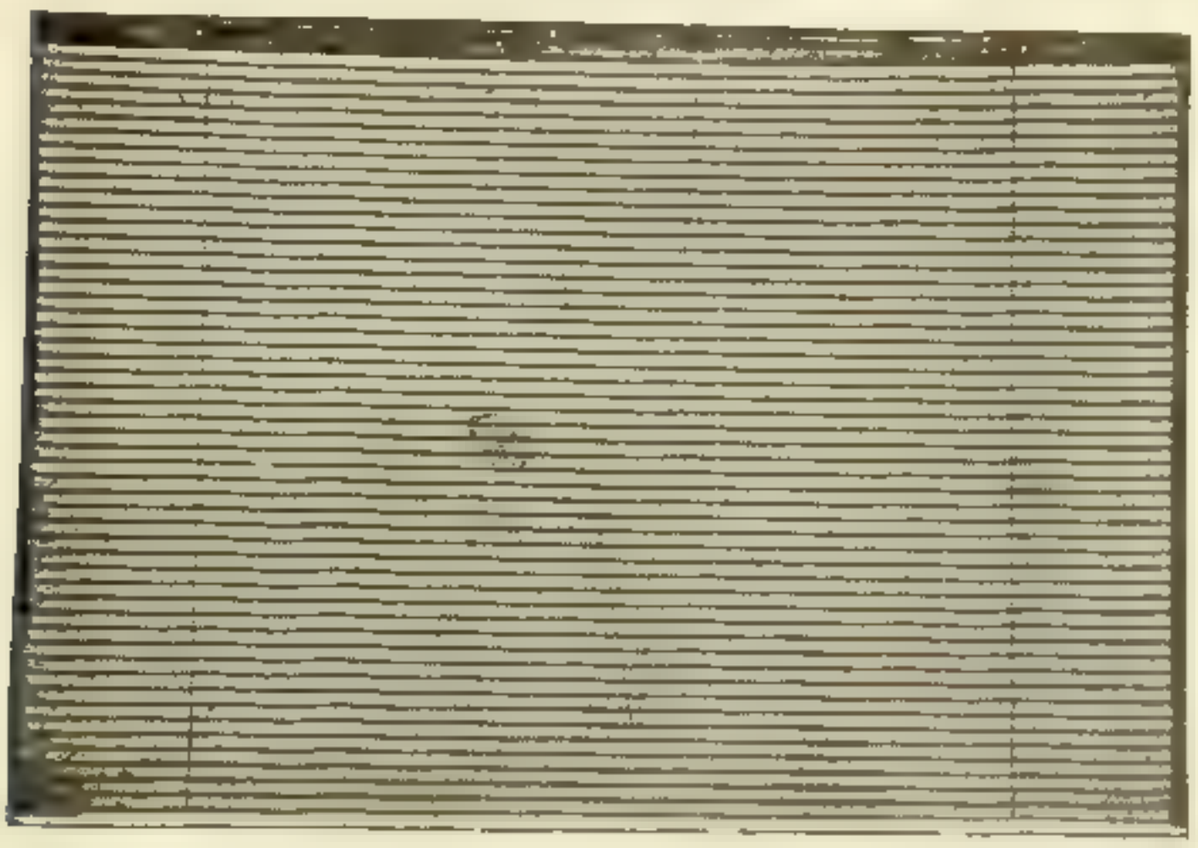

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VOL. XIV.] *MARCH*, 1906. [No. 159.

ORCHID-GROWING IN THE TROPICS

[The following article by the late Mr. E. S. Rand, of Para, which appeared in the *Proceedings of the New York Horticultural Society*, contains some interesting information respecting the Orchids of the Upper Amazon, hence its reproduction in our pages.—ED.]

The culture of Orchids, often attended with so many obstacles in temperate regions, presents little or no difficulty in the Tropics. When after voyaging for some years on the Amazon, from Pará to Pebas, in Peru, a distance of some 2000 miles, and seeing Orchids in their habitats, I decided to remain permanently in Pará, I soon had a small collection of the more common Amazonian Orchids, such as many species of Catasetums, Gongoras, Rodriguezias, Epidendrums, Oncidiums, Galeandras, Trichocentrum atropurpureum, Stanhopea eburnea, and Cattleya superba, Eldorado, Wallisii, and luteola. These plants, although coming from regions hundreds of miles removed, all flourished under the same treatment. Those of which I had plenty were simply wired on to the trunks and branches of the Orange and Sapodilla trees in the orchard, but the choicer kinds (as, like almost every one else in Pará, I was only a tenant at will in my house) were fastened on to bare hard wood blocks, which were hung on the trees, or on the shady side of the orchard fences. On the trees the growth of roots began at once, and the distance the roots would run up and down the trunks was astonishing. For example, a medium-sized plant of Cattleya superba stretched its roots four feet up and more than six feet down the trunk of a Sapodilla tree, these long roots often branching and covering the bark like a network. On plants grown on blocks the root growth was far shorter, but no less strong and healthy. Such profusion of roots could not fail to produce strong and healthy growth, and after a few months I was never without a good display of Orchid bloom.

The treatment was simply, when two consecutive days followed without the afternoon shower, to give a syringing in early morning to the plants on blocks, those on the trees never requiring any. When the plants showed bud they were removed to the piazza and hung to the posts or to the rafters of the roof, where, being under cover and thus out of reach of

the rain, they received a morning syringing. When the plants were out of bloom they were returned to the orchard. The show of flower was at times very fine. Plants of Cattleya superba were seldom out of bloom; this species never rested and showed flower from every new growth, the colour varying from clear pink to deep lake. A single spike would often show seven blooms, and many individual flowers measured three inches in diameter, but, as a rule, the very large flowers were wanting in depth of colour. Cattleya Eldorado, blooming from November to March, presented a great difference of colour, from deep pink to the pure white Cattleya Wallisii, which is only a white Cattleya Eldorado in flower, though very distinct in growth. The size and depth of colour of the blotch on the lip, varying from deepest orange to light yellow, was very marked in the various plants, as also the purple spot and the frilling of the tip of the lip. Cattleya luteola, like C. superba, was always in growth and bloom, the canary-yellow flowers, produced two to eight together, showing a great variety in the carmine markings of the lip. Stanhopeas and Coryanthes usually bloomed from December to June, but if one has many plants, some can be found showing flower every month in the year.

Rodriguezia secunda and laxiflora bloom in January. The former in the shape of a large plant makes a magnificent show. One of my plants is as large as a bushel measure, and had last winter more than 100 long spikes of bloom. This Rodriguezia is no less ornamental in seed than in flower, the capsules bursting and showing the masses of infinitesimal white seeds which look like woolly flowers. It is very common around Pará, the Mango trees being full of it, and it is in fact almost the only Orchid which is found in the city itself. There is a great difference in the plants; some have thin leaves, few spikes and pale flowers, and others thick fleshy leaves, and many spikes with very rich cherry-coloured blossoms. The best are quite as handsome as Saccolabium ampullaceum. Rodriguezia laxiflora is a charming little plant, with long pendent spikes of greenish yellow flowers with a small white lip, which fill the whole air with a rich spicy fragrance. Scuticaria Steelii on the trees produced its rush-like leaves four feet in length, and in February gives an abundance of bloom which lasts long in perfection.

Catasetums and Myanthus were present in great variety, and, owing to their ever-varying flowers, are always a source of wonder and delight. Certain premises granted, one can usually tell what the flower of a plant will be like, but there is no telling what a Catasetum will do. If a plant produced at the same time a Rose and a Lily, the two flowers are not more unlike than those which many of my Catasetums have produced from the same pseudobulb, and the same plant in different years produces wholly different flowers. The few Cycnoches which I have, also develop some

curious freaks in flowers, but their inconsistency shows some little rule. Trichocentrum atropurpureum is a little gem, blooming for many months, and deliciously fragrant. Different plants vary much in markings, but all are lovely. Oncidium Lanceanum, called here "Orelha do Burro," or Ass's Ear, is the best of the Oncidiums. It grows freely and yields great branching spikes of bloom from November to March. The flowers last long in beauty, and are very fragrant. We have some plants larger than a bushel basket, with more than a dozen tall spikes. Galeandra Devoniana and a small white flowered species, as far as I can find not described, bloom from January to July. The former often attains a height of three feet, and develops its great fragrant flowers in profusion. The latter is always in bloom, in fact will kill itself by blooming; it is very rare, and, although not showy, is a very attractive plant. The Rio Negro variety of Epidendrum bicornutum, if indeed I am correct in my name, is a very beautiful Orchid, but, unfortunately, it is very difficult to transport. Out of fifty plants sent me from Mañaos, which were only a week in the case, I only saved ten. Of a lot taken to New York in the spring of 1882 not one survived, in spite of every personal care. The pseudobulb is hollow, with two terminal coriaceous leaves, from between which the flower spike springs. This is long, and, according to the strength of the pseudobulb, bears from two to fifteen large white flowers, which somewhat resemble and are as beautiful as those of Phalænopsis grandiflora; they last weeks in perfection, and are deliciously fragrant in the morning. This plant, in contrast to the Trinidad E. bicornutum, which is a shy bloomer, flowers very freely; every little pseudobulb gives a flower spike, and we have seen a large plant on a tree in a neighbour's garden which had twenty long spikes of bloom, not one with less than a dozen flowers.

There is one other very beautiful Amazonian Orchid probably undescribed—a very lovely Zygopetalum of the *Z.* maxillare or rostratum group, which yields semi-pendent spikes of large white flowers, the lip varying from chocolate to deep rich blue. The individual flowers last six weeks in beauty. The plant is scandent, producing its pseudobulbs from a running root stock, and each pseudobulb gives two spikes of bloom from the lower leaves on the opposite sides.

Our first Orchids not Amazonian came from Bahia. They were generally long-leaved Epidendrums of little value, but plants of Epidendrum dichromum, Cattleya Aclandiæ, guttata Leopoldi, amethystoglossa, Harrisonæ, and amethystina, Lælia xanthina, Miltonia spectabilis and candida, Oncidium Forbesii and Harrisonianum, and Leptotes bicolor proved great acquisitions. They all, though weak plants, did well under similar treatment to the others, and made healthy growth and roots.

(To be concluded.)

CATTLEYA × FLAVEOLA

THE work of clearing up the history of some of the early Cattleyas is something like competing in an obstacle race, so difficult is it to get at the facts. There are some curious hybrids, natural and artificial, grouping themselves round C. intermedia and C. guttata, which I have long been hoping to clear up. One of these is C. × flaveola, Rchb. f. (*Gard. Chron.*, 1882, ii., p. 596), which was suggested as derived from "C. intermedia × guttata?" and described as follows :—

"Mr. F. Tautz, Studley House, 289, Goldhawk Road, London, W., kindly sent me the fine flower of this hybrid which, I am informed, was raised by Messrs. Backhouse, Holgate House, York. The flower gave one at first the impression of a yellow Lælia elegans. It is equal to a middle-sized flower of that species, and has ligulate, rather acuminate sepals and petals, broader in the middle, all of a pale, clear yellow, coming very near to the lightest sulphur colour. The lip has much the shape of that of a Cattleya guttata. The side laciniæ are semicordate at the base, oblong, prolonged into a long, semi-lanceolate apex equal to the narrow claw of the mid-lacinia, which extends into a transversely oblong emarginate, crenulate rugose mid-lacinia. The whole mid-lacinia is purple as on the tops of the white side laciniæ, both inside and outside. The column is very plump, white, purple at the top. Cattleya × picturata, Rchb. f., may be compared to it from its origin, but it is widely distinct in its smaller blunt flowers and totally distinct lip. My typical specimen [of that has thirteen flowers. It is also called 'hybrida picta.' Cattleya × flaveola is exceedingly elegant to my taste. It is also near Cattleya sextus, but that has much broader blunt acute sepals and petals."

No specimen or drawing being accessible, I was puzzled as to what it could be, and according to the record the natural hybrid C. × scita had a similar parentage, and both should be forms of Mr. Dominy's earliest Cattleya hybrid, C. × hybrida (*O. R.*, v., p. 333). The discovery of an excellent painting of C. × scita in Mr. Day's collection of Orchid drawings gave a new clue to the origin of that plant, namely, that it was a hybrid between C. intermedia and C. porphyroglossa (*O. R.*, xi., p. 254), and I now believe that C. × flaveola has the same origin. Both the colour of the flower and the very characteristic shape of the lip, as above described, are completely in agreement, and this explains the marked differences from C. × hybrida. And I suspect the "C. sextus" mentioned in the above note is a misreading of Reichenbach's almost illegible handwriting of C. scita. At all events, I cannot find any further trace of the name. I also suspect that C. × flaveola is a natural, not an artificial hybrid, unless Messrs. Backhouse can show evidence to the contrary. The idea that C. ×

flaveola is a form of C. × scita, and that this and C. × hybrida are quite distinct hybrids simplifies matters enormously. The existence of another C. × hybrida (= C. × Brabantiæ) has already been pointed out.

R. A. ROLFE.

DISA ERUBESCENS.

IT is well known that the large and polymorphic South African genus Disa extends into the highlands of tropical Africa as well as into Madagascar, and now a handsome tropical African species has appeared in cultivation. It is Disa erubescens, Rendle, which was described from dried specimens about eleven years ago (*Journ. Bot.*, 1895, p. 297). Tubers were sent to Kew from British Central Africa by J. M. Purves, Esq., and one of them has now flowered. The flower is both large and handsome, and the colour is nearer to the well-known Disa grandiflora than most other cultivated ones, though the structure is very different. The dorsal sepal is oblong-spathulate in shape, somewhat concave and obtuse, and 1¼ inches long, while the colour is rich orange, spotted with crimson. Its spur is linear, five lines long and dull crimson in colour. The spreading lateral sepals are oblong, ten lines long, and scarlet, becoming paler at the base. The petals are erect, auriculate at the base, extending upwards into a linear lobe with a slightly broader diverging apex, this part being coloured like the dorsal sepal. The lip is linear, and half an inch long. The species is diffused over a considerable area, having been collected on Mount Ruwenzori, from 6,000 to 7,000 feet elevation, by Scott-Elliot, near Lake Tanganyika, at 5,250 feet by Nutt, and also in Nyassaland and on the Zomba plateau by Whyte, at elevations between 2,000 and 6,000 feet. Wild specimens are considerably over a foot high, and bear racemes of from five to eight flowers, but the Kew plant, owing to not being established, has at present only a single flower. It bears a single lanceolate leaf, six inches long, and the basal sheaths are regularly spotted with red-brown. It is a very interesting acquisition.

R. A. ROLFE.

MASDEVALLIAS AT WOODHATCH LODGE.

ON December 21, upon entering one of the Orchid houses at Woodhatch, Reigate, the residence of Mrs. Haywood, I was astonished and delighted to see a number of well-grown and splendidly-flowered plants of the well-known Masdevallia tovarensis. Altogether there were nineteen plants arranged in one row through the entire length of the house, which is about twenty-five feet long. Each plant was a picture in itself, being literally covered with flowers; one specimen produced as many as ninety spikes,

and each spike was carrying two or three white spicy-scented flowers, the aggregate number of spikes being 1,700, carrying in all over 4,000 flowers. Being a compact growing subject, throwing its flowers well above the dark-green foliage, M. tovarensis is indeed an extremely charming Orchid, and a valuable plant for decorative purposes, especially when seen in such luxuriant health as are these plants under Mr. Salter's skilful management. The plants are grown in moderately shallow pans, about eight or nine inches in diameter. Good drainage being essential, the pans are about half filled with broken potsherds ; over these a layer of moss is placed, and in potting the plants are placed so that the surface of the compost is about level with the rim of the pan. The rooting medium is composed of fibrous peat and live sphagnum-moss in equal parts, and a very small quantity of leaf soil mixed with it. Plenty of living heads of sphagnum-moss are put on the surface, and by the time the plants are in full growth, the whole of the compost is covered with living moss. After the disturbance caused by re-potting, the plants are very carefully watered, but when they commence to make roots and new leaves, water is again supplied liberally and continued through the growing season. This Masdevallia should be grown in the Cool house from April until October, and requires an abundance of air and shade. From October till April the plants thrive best in an intermediate temperature. On the day of my visit to Woodhatch, the temperature of the house was 57 degrees at 4 p.m.—W. H. W. in *Gard. Chron.*, 1906, i., p. 14.

HARDY ORCHIDS FROM SEED.

A CORRESPONDENT writes :—"I am anxious to try my hand at raising seedlings of hardy Orchids, and even at hybridising if possible. I have had to sow seeds of various terrestrial Orchids from China, &c., and have also sown a lot of home-saved seeds of Cypripedium, but so far have little but failure to chronicle. I am aware that even the kinds grown in warm houses take a considerable time to germinate, but I would be glad to have any advice you can give me, also any literature you can recommend me to get. There may be insuperable difficulties in the way, but I think it would be a triumph if we could obtain hybrids of hardy Orchids."

The letter recalls an article on the subject which appeared in our first volume (pp. 246-248), summarising what was then known on the subject, and we do not remember any subsequent information of importance. The secret, if there is any, seems to be to sow the seeds under suitable conditions (and by this is meant conditions under which the parents succeed), keep the surroundings fairly moist, keep weeds and predacious insects in check, and await the result. We have seen self-sown Orchis

maculata in a tuft of Veronica, though their presence was not suspected till the spikes appeared. The seeds had evidently blown there from a plant near by, and the presence of the Veronica prevented the seedlings from being disturbed. In a similar way seedling Orchis have been found in tufts of Iris. We once tried to raise Cypripedium Calceolus from unquestionably good seed, but without success. We should be obliged if any of our readers will forward us any of their experiences on the subject. There are many natural hybrids among hardy Orchids, and artificial ones are not outside the range of possibility.

RESTING OF DENDROBES.

THIS is a very open question, where and how to rest Dendrobiums. I, with many others, used to consider it essential, in order to flower them well, to remove them from the growing houses and place them in such a structure as a vinery or peach house, where they had much air and sunshine. I have now changed my views, and consider that way now quite unnecessary to produce abundance of flower. On the principle of resting which we now adopt we get a better class of flowers, and the general well-being of the plant is preserved, besides giving strength and sustenance to the new growth previous to new roots being emitted. The majority of our bulbs are as plump after they have finished flowering as they were before.

I believe the whole thing is centred in full development. It is often thought that when the new growth has attained its full length the time has come for ripening to start, but full development is not attained till some time later, and, when full development is attained, maturity soon follows without much artificial aid. Then the new bulb contains much substance, and can produce its flowers without feeling any great strain.

The process we adopt is as follows: From the middle of August we admit a little air from the side or top ventilators at night, never much. The time of shading is also very gradually reduced, scarcely altering the supply of water till the new bulbs assume a golden colour, when the water is gradually reduced, but we never withhold it long enough to cause any shrivelling of the bulbs. During November and early December we allow them to remain dry as long as possible, and if they are properly matured they will go several days without harm, maintaining a minimum temperature of 55° till the new year, by which time the buds will be pushing fast, when the temperature may be raised five degrees at night, and rather more water given.

Many growers cannot devote a house to Dendrobiums, but nearly as good results can be obtained by taking them to the Intermediate Orchid house when the growth has attained its length.

I am sure many Dendrobiums are ruined by injudicious resting, causing disappointment to the employer and grower, and, although we have now so many fine varieties of other Orchids, I still consider a good collection of well-grown Dendrobiums as most essential in order to provide an abundance of flowers, which are useful in many ways during January, February, and March, and although now they can not be called popular, I yet believe we shall see them grown in quantity in all collections of note.

Gatton Park Gardens, Reigate. W. P. BOUND.

FIG. 8. DENDROBIUM × ARTEMIS.

TWO USEFUL DENDROBIUMS FOR FLOWERING AT CHRISTMAS.

DENDROBIUM × Artemis was raised in the collection of Jeremiah Colman, Esq., from D. × splendidissimum grandiflorum ♀ and D. aureum Gatton Park var. ♂. The flower illustrated is a typical one: there are variations, some being quite deep rose all over, others only tipped with rose, but in nearly all cases the centre colouring on the lip is decidedly darker, brighter, and larger than in D. × splendidissimum grandiflorum, and

we find it easier to flower this for the Christmas season than we do to keep it back to come in with the other varieties.

DENDROBIUM × CURTISII is another fine variety, in which that beautiful species, Dendrobium aureum, is also represented. The variety figured is of my own raising, and differs from most forms of this charming hybrid by its having a very elongated lip. The central blotch of the lip is plum-coloured,

Fig. 9. DENDROBIUM × CURTISII.

and all the other parts of the flower pure white. This was one of the plants exhibited in our group at the Royal Horticultural Hall on February 13th, yet it was fully out at Christmas. W. P. BOUND.

Gatton Park Gardens. Reigate.

[For the two excellent portraits with which this article is illustrated we are indebted to Mr. Bound, by whom the photographs were taken and kindly forwarded to us.—ED.

CALENDAR OF OPERATIONS FOR MARCH.

By J. M. Black, Streatham.

East Indian House.—There will now be considerable activity in this house, and many of the inmates will require overhauling. Re-potting plants of Vandas, Saccolabiums, and Aërides is a matter of much difficulty, as the fleshy roots cling tenaciously to the sides of the pots or baskets, and, wherever possible, it is best to leave these undisturbed. With care, most of the old material can be removed without much root disturbance, and the fresh worked in. The compost for these plants should be of a rough, open nature, and should include some half-decayed oak leaves to provide humus, the other ingredients being fibrous peat and sphagnum moss. In potting large plants, such as Angræcum sesquipedale, large pieces of charcoal can be worked in to keep the whole open and sweet. Plenty of moisture must now be distributed in this house, especially round plants that have been disturbed.

Thunias.—T. Marshalliana, T. Bensoniæ, &c., should be repotted this month. Use a compost of fibrous loam and leaf-soil, to which coarse silver sand or broken crocks have been added. Drain well, and keep the base of the bulbs on the surface, having left sufficient old roots to fix them in the new compost. The bulbs will require support from sticks. From now on they will require plenty of warmth and light, so must be stood well up to the glass. Apply water very sparingly until well advanced.

Zygopetalums.—Z. Mackayi, Z. crinitum, &c., can also be potted now. Fibrous loam, leaf-soil, peat and moss in equal quantities, with the addition of silver sand, will make a suitable compost. These should receive a place in the Intermediate house, or airy end of the Cattleya house. If kept too stagnant the foliage soon shows signs of spotting.

Deciduous Calanthes.—Varieties of C. vestita, C. rosea, C. × Cooksoni, C. × Bryan, C. × William Murray, C. × Veitchii, &c., will now be commencing to grow, and should be re-potted when the new growths are an inch or two up. A compost of three parts fibrous loam and one part leaf soil, with a sprinkling of silver sand, will be found suitable. The pots should be four inches to six inches large, according to the size of the bulb, and well drained. Pot firmly, and have the base of the bulb a little way under the surface of the compost. The potting material should be fairly dry, and not colder than the temperature of the house in which the Calanthes are. A warm position well up to the light should be provided them, and no water will be required for some days. Keep the surroundings moist, and gradually increase the water as the roots ascend and the foliage expands.

Shading and Ventilation.—The sun will be too strong this month

for a good many of the Orchids, and before the end of the month shading will be pretty general. Newly-potted plants are usually better shaded until the roots get a new hold. Phalænopsis and many other plants in the East Indian house cannot stand much direct sunshine. Small seedlings of all kinds will also require shading for some hours every day when the sun is strong. Where only a few plants inside a house are of a tender nature, shading locally with some temporary arrangement inside the house will be better than shutting out the heat. Air may now be given pretty generously when the weather is favourable, but avoid any extremes. One is sometimes tempted to give more air than is advisable at this season, so as to be able to keep the blinds up. March has a bad reputation. South and west winds that travel slow are safe. With these winds a chink of top air on the Cattleya house and no shading will do good. The pseudobulbs will get warmed up, and out will come the roots. But take no risks with an east wind.

Damping down will have to be performed now twice daily. Things will be taking on a greener appearance, and will be greedier after moisture as they get thoroughly awakened to new life. The syringe will now play an important part. The Odontoglossums will welcome a spray overhead on fine days, and so will all small seedlings.

Firing.—Avoid as much as possible having sun heat and fire heat at one time, but do not let the fires get too low, by being deceived with sun heat at mid-day, nor let the temperatures drop too quickly during the afternoon. The morning sun will lift the temperatures quickly, and if the blinds are dropped it may be found necessary to reduce any air which may have been given, and also to keep the fire moving along. All heat should be shut off the Odontoglossums in the morning when the day is fine. The temperatures recommended for January will be found to be still high enough with fire heat only. Of course, the day temperatures will soon in a great measure look after themselves, and the temperatures recommended in January should be regarded as the minimum.

Lælio-cattleyas.—From germination until they are two years old Lælio-cattleyas have no clearly defined period of rest. The seedling growth has barely finished before the bend in the leaf-axil starts, and this second growth will no sooner be completed than the eye at its base will swell, so that there is really a continuity of growth, varying in its degree of activity according to the season, for the first two years of the plant's existence; during the third and fourth year, there will be great irregularity among plants of the same age and same cross, they being probably all at different stages of growth at one time: but as they near the flowering period they come more into line, and although growing well into winter, they may take a short dormant period.

The object which one has in view with small seedlings is to get them large as soon as possible, and as there is no interruption or exhaustion from flowering, and no flowering period to be anticipated and prepared for, the method of treatment differs in some essential points from that accorded to adult plants. Sunlight and air, so necessary to ripen up the tissues of Cattleyas and Lælias that are of flowering size, and without which they will not flower up to their true character, should both be applied less liberally to these small seedlings. Lælio-cattleyas will stand a lot more sun before turning yellow than imported species will, and they should receive all they will stand when large, but strong light has a dwarfing effect on small seedlings, and thus the flowering stage, so much longed for, is retarded. The temperatures must to some extent be regulated by the species from which the seedlings are derived, but should be considerably higher than these enjoy, and for at least the first two years of growth no difference need be made in this respect between seedlings derived from cooler growing species, such as Lælia Jongheana, and those derived from species requiring more heat, such as Cattleya superba. Later on one must of course differentiate. A night temperature of 65 in winter seems to suit all Lælio-cattleyas admirably for the first two or three years, and they must receive similar treatment to growing plants with regard to watering. No plant, unless it be deciduous, can be kept at a minimum temperature of 65° in winter without requiring a considerable amount of water at the root, and as Lælio-cattleyas are fully furnished with leaves, which offer a large surface for transpiration, they should not be allowed to suffer for want of water.

Of late a good many Lælio-cattleyas have changed hands in a small state, and, if bought at the auction-rooms, will have reached home in a dry condition. This will be somewhat perplexing to the inexperienced grower, but as these plants have been allowed to dry out before being sent to the saleroom—so as not to be injured by the cold in transit or through standing in a draughty room—their being dry thus permits of an easy explanation. They should not receive water immediately on reaching home, but should have at least twenty-four hours in the house to get thoroughly warmed through.

COMPOST FOR LÆLIO-CATTLEYAS.—Some difference may also be made in the compost used for these when they are small and for the same plants when they are large. For the first potting into single pots (and sometimes for the second), which takes place when the plant is anything up to eighteen months old, but usually when it is about twelve months, Belgian leaf-soil gives good results. My plan is to give a good surfacing of sphagnum, nearly as much in depth as the leaf-soil, and I find more roots in the sphagnum, or between it and the leaf-soil, than in the leaf-soil itself. When beyond a

three-inch pot, we use a more porous mixture, viz., peat in lumps, sphagnum moss, and oak-leaves, with a good sprinkling of sand, one-fourth of the bulk being leaves. For the final potting before flowering—if we can so calculate it—the moss and leaves are very considerably reduced, thus giving the compost a more lasting nature, and the pots are chosen large enough to accommodate the plant for two years.

Where raising has been successfully carried on, there will be plants of all sizes which will soon want re-potting, and it should be known that a small plant feels the effects of being repotted much less than the large ones, and a beginning should be made with these.

The month of March is of great importance to the hybridist, as it marks the beginning of his seed-sowing season. There is some difference of opinion among growers as to the advisability of keeping seed which has ripened during the previous autumn and winter until spring, but I myself am perfectly satisfied that it is best to keep it until March, and then start tentatively, as a better season is yet to follow. If the seed is sown, say, as late as September, it may germinate, but will make very little progress during the winter, and will more than likely be of delicate growth when spring comes, and the spring-sown seed will rapidly catch up to it, being stronger and freer in growth. If seed is sown actually in winter, the embryo will swell up and become green, and so remain, for no leaf point will come through the spermoderm. It is very unlikely, also, that seed kept thus suspended will germinate in spring, although I know perfectly well that there are plenty of cases on record where it has happened—even after two years. I prefer getting mine up in two months although I don't always do it, alas! I know a man who got a Brassavola Digbyana hybrid in sheath in ten months—but I did not see the plant!

PREPARATION OF SEED.—How to keep the seed in a sound condition all the winter is not a matter of much difficulty, if common-sense precautions are taken. When the capsule splits and commences to shed the seed, it should be cut from the plant, taking all the green flower stem possible. The capsule should then be placed in a pan on a piece of tissue paper, and hung up in the sun in a perfectly dry house. Let it remain here until the capsule becomes thoroughly dry and wizened, when the seed will all fall out of the dry husks by tapping. The seed should then be folded neatly in the square of tissue paper and slipped into a seed envelope, which must be carefully labelled and placed in a drawer where a dry temperature of 40°-50° is maintained. The main point is to get the seed thoroughly ripe and dry before storing away. It is a great mistake to tie up the pod and leave it on the plant long after the seed begins to drop, as the life germ cannot fail to be irritated by the moist growing condition of its environments. Seed which ripens in the spring and summer should receive the

same treatment by hanging the pod up in the sun for a time before sowing.

I hope to find room in next month's calendar to further discuss this subject.

LATH ROLLER BLINDS.

IN your issue for February we notice an article on "Shading," in which your contributor, Mr. J. M. Black, refers to lath roller blinds, and states (p. 47) that the galvanized clips are the weak point in these blinds. As makers, we feel constrained to point out that these clips will last an indefinite number of years if the blinds are given fair treatment, *i.e.*, the same treatment which one would give to woodwork which is exposed constantly to the atmosphere. By this we mean that they should be painted occasionally. It is not to be expected that any thin metal work will wear well, even when galvanized, without a certain amount of protection in the way of paint, and we can confidently assert that your contributor would alter his opinion as to the weak point of lath roller blinds if he were to treat them in the reasonable manner which we have suggested.

WALTERS & CO.

ORCHIDS AT KEW.

AN enumeration of the Orchids, species and hybrids, now in flower at Kew would extend to over a hundred, so that the following notes must not be taken as exhaustive. The Dendrobiums in particular are making a good display of their exquisite and beautiful flowers. Foremost among them is the old and familiar Dendrobium nobile, in both light and dark forms, with the varieties nobilius, Cooksonianum, and murrhiniacum. D. Wardianum is represented by several good forms, together with D. crassinode. The hybrids include D. × Wardiano-japonicum, D. × Ainsworthii and its varieties Edithæ and splendidissimum, D. × Rolfeæ, D. × Schneiderianum, D. × endocharis, D. × Vannerianum, D. × Artemis, D. × burfordiense. D. × euosmum var. virginale, D. × Curtisii, D. × chrysodiscus and D. × Cybele. Suspended from the roof are several plants of D. primulinum, also a well-flowered plant of the rather scarce D. Madonnæ, a native of New Guinea. The gigantic D. undulatum, with its tall leafy stem, reaches from the floor to the roof of the house, and bears at the extreme apex three large racemes of flowers, which are strongly undulate, and of a rich tawny brown. Mingled with these are a few miscellaneous subjects, such as Phaius × Marthæ and P. grandifolius, Cœlogyne psittacina, Scuticaria Hadwenii, Acriopsis indica, the graceful and fragrant Bulbophyllum auricomum, the curious Lockhartia Weigeltii, and several Platyclinis, both P. glumacea and

P. latifolia, bearing from ten to sixteen racemes of flowers, which not only give a graceful appearance to the plants, but fill the whole house with their fragrance.

In the Botanical corner, which was noted last month, are several interesting items, including Maxillaria arachnites, M. flava, and M. sanguinea; this latter is indeed a little gem, having flowers of a brownish appearance with a bright red centre. Other items are Bulbophyllum siamense, Spiranthes floribunda, Liparis nervosa, Tainia latifolia, Stenorrhynchus speciosus var. maculatus, Microstylis metallica, Platycl inis arachnites, Cirrhopetalum picturatum, and, suspended in a small basket above them, is the recently introduced C. breviscapum, together with the curious little Trias picta.

The Cattleya house is also gay with several well-flowered pans of Cœlogyne cristata, a few Cattleya Trianæ, including the variety delicata, with C. Loddigesii. Several Lælio-cattleyas add greatly to the effect by their charming colours, as L.-c. × Charlesworthii, × Myra, × Lydia, × Andromeda, and warnhamensis, also Lælia harpophylla, and Brassocattleya × Lindleyana. Among the Cymbidiums are C. Lowianum, C. × eburneo-Lowianum, and C. eburneum. Hanging from the roof is a plant of Ornithidium coccineum, and a large clump of Dendrobium speciosum commonly known in Australia as the rock lily.

Among the Paphiopedilums there are only a few additions to the list which was given last month, many of which are still in flower. The recent additions include P. Haynaldianum, P. × Deedmannanum, P. Chamberlainianum, and P. Boxallii. Flowering in the same house are Vanda suavis and V. tricolor. Angracums citratum, eburneum, Ellisii, and Sanderianum, Listrostachys fimbriata, and several good spikes are still to be seen upon the Phalænopsis, including a plant of the rare P. Mannii.

In the Cool house several plants of Odontoglossums crispum are still in flower, also O. Uroskinneri, O. bictonense, and several plants of the charming little O. Cervantesii, with the rare O. nævium and O. nevadense. Among conspicuous objects are several plants of the late-flowering O. grande. A good batch of Satyrium odorum make their presence known by their fragrance rather than their appearance, the flowers being green. Near by is a rose-coloured form of Lycaste Skinneri, showing well against the green Satyriums. Among the Masdevallias are M. Veitchiana, Schroederiana, macrura, Mooreana, ventricularia, tridactylites, and the insignificant little M. simula, with the hybrids M. × Fraseri and M. × Pourbaixii, and Stelis racemiflora. Cynorchis compacta, which was mentioned last month, is flowering, and to all appearance is now at its best. Last, but not least, is the familiar Aërides Vandarum on a raft in its usual corner, and flowering quite freely.

THE HYBRIDIST.

LÆLIO-CATTLEYA × ORIENS.—An interesting hybrid raised in the collection of R. G. Thwaites, Esq., of Streatham (gr. Mr. Black), from Lælia Cowanii ♀ and Cattleya Trianæ ♂, and exhibited at the R.H.S. meeting on February 13th. The flower sent most resembles the Lælia parent, being rich orange yellow throughout, but enlarged to a diameter of 4½ inches across the petals. The lip is correspondingly enlarged, very undulate, and has somewhat darker veining throughout, but the purple colour of the pollen parent is completely obliterated.

LÆLIA × MARY COLMAN.—At the same meeting another pretty little hybrid appeared, as Lælia × Mary Colman, from the collection of Jeremiah Colman, Esq., Gatton Park, Reigate. Mr. Bound, in sending a flower, remarks that it is a cross between Lælia Jongheana ♀ and L. flava ♂. The flower is four inches in diameter across the petals, with widely spreading, comparatively narrow sepals and petals, of pale primrose colour, while the three-lobed lip is deep yellow, very strongly and regularly crisped, and with a light yellow margin, but there is only a trace of the very characteristic Jongheana keels on the disc, these being reduced to slightly thickened lines. The much crisped lip shows the influence of L. Jongheana, as well as the general shape of the flower, and Mr. Bound remarks that it seems strange there should be no trace of the pink Jongheana colour. In the somewhat elongated scape the influence of L. flava is again seen.

SPATHOGLOTTIS × COLMANII.—Flowers of this pretty hybrid, which received an Award of Merit from the R.H.S. on February 13th, are also sent from the same collection. Mr. Bound remarks that the parentage is S. aurea Gatton Park var. × S. × aureo-Vieillardii. It bears a general resemblance to the latter, but is at present rather smaller, and the front lobe of the lip is less broadly spathulate. The ground colour is deep yellow, with the sepals slightly and the petals more deeply spotted with purple, while the lip is still more marbled with the latter colour.

DENDROBIUM × BRODIEI.—This is another pretty hybrid from Mr. Colman's collection, which received an Award of Merit from the R.H.S. on February 13th. Mr. Bound remarks that it is a very distinct and floriferous hybrid, derived from D. × Wiganiæ and D. × Dominianum, and is named in honour of H. C. Brodie, Esq., the newly-elected M.P. for the Reigate Division of Surrey. It bears a considerable general resemblance to D. nobile, and has rosy sepals, petals tipped with the same colour and white below, and a light yellow lip, tipped with rose, and bearing a pair of smallish maroon eyes in the throat.

PLEIONE YUNNANENSIS.

A FEW years ago several Chinese species of the interesting little genus Pleione were described from dried specimens, and some time later one of them, namely, P. pogonioides, Rolfe, was introduced to cultivation by Messrs. James Veitch & Sons, through their collector, Mr. E. H. Wilson, but it has not yet flowered. Now a second species has appeared. At the R.H.S. meeting held on February 13th last Messrs. Sutton & Sons, Reading, exhibited a pan of a charming little plant labelled "Orchid sp. from China." It was referred to the Scientific Committee, and I

Fig. 10. PLEIONE YUNNANENSIS.

immediately recognised it as a species of Pleione, but from memory was not quite certain which. It was awarded a Botanical Certificate. A few days later Messrs. Sutton sent flowers to Kew for determination, which proved on comparison to belong to Pleione yunnanensis, Rolfe (*O. R.*, xi., p. 262), a species originally described under the name of Coelogyne Pleione yunnanensis, Rolfe (*Journ. Linn. Soc.*, xxxvi., p. 230). It is a native of Yunnan, and was originally discovered by Mr. W. Hancock, F.L.S., in mountain pastures at Mengtse, at 6,000 to 7,000 feet elevation, the flowers being noted as red to purple. The date is given as March 30,

1895, and the plants collected were then in flower. Soon afterwards Dr. A Henry met with it in the same district, his specimens being from grassy mountains to north of Mengtse, at 5,500 feet elevation, and the colour of the flowers is given as pink. It is a pretty little plant, having subterranean pseudobulbs, and flowering in advance of the leaves. The scapes are three to five inches high, and there is a cucullate obtuse bract, tubular at the base and about an inch long, below the flower, and several basal sheaths. The flowers, which are represented natural size in the photograph by Mr. E. C. Hart, here reproduced, may be described as having magenta-rose sepals and petals, with a slightly paler lip, on which occur a number of irregular reddish purple blotches, while the disc is ornamented with five tall narrow keels. Both the keels and the margin of the lip are prettily fringed, though in the lower right-hand flower the keels are only crenulate. This also is slightly paler in colour, and the blotches on the lip are clear bright purple, showing that the species varies somewhat. Its appearance in cultivation is very interesting.

R. A. ROLFE.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of the R.H.S. was held at the Royal Horticultural Hall, Vincent Square, Westminster, on February 13th, when there was an altogether exceptional display of Orchids, perhaps partly due to the fact that it was also the date of the Annual General Meeting. No less than twenty-seven Awards were made, not including those of the Diploma competition, namely the Lindley Medal, two Gold and eight other Medals, three First-class Certificates, twelve Awards of Merit, and one Botanical Certificate, while the Scientific Committee also gave a Botanical Certificate to a Chinese species of Pleione new to cultivation.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury, staged a splendid group, which was generally considered to be the finest yet seen in the new Hall. A Gold Medal was awarded, and in recognition of the excellent culture shown, the Lindley Medal was awarded to Mr. H. G. Alexander, the Orchid grower at Westonbirt. One can only mention a few of the prominent features of such a rich and varied group, which was beautifully arranged with palms and foliage plants. Specially noteworthy were numerous excellent white forms of Lælia anceps, arranged with pans of Sophronitis grandiflora in front, many handsome Cattleya Triange, C. Percivaliana, some beautiful hybrids of Lælia cinnabarina, Cypripedium × Scipio, C. × aureum in many varieties, C. × Mandiæ, Lælio-cattleya × luminosa, Cœlogyne cristata, Masdevallias, and others. A First-class Certificate was given to Cymbidium × Lowio-grandiflorum, having very

large flowers, with green sepals and petals, and the lip cream-white with reddish-spots. It was raised by Messrs. Veitch, who formerly received an Award of Merit for it. An Award of Merit was given to Cattleya Trianæ Westonbirt var., a beautiful, richly-coloured form.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), was awarded a Gold Medal for a splendid group, consisting largely of Dendrobiums, and occupying 700 square feet. It included thirteen distinct varieties of D. nobile, D. n. Colmanianum being very fine, and one plant of D. n. album bearing 165 flowers. Other good things were D. × Rubens, D. × R. Colmanii, D. × R. Gatton Park variety, D. × Othello, D. × Ainsworthii Colmanii, D. × Cybele, a splendid D. Wardianum album, D. × Schneiderianum, D. × melanodiscus Aurora, D. crassinode album, D. tortile album, D. × Artemis, and other Dendrobes. With these were some good hybrid Calanthes and Phaius, Epidendrum × Boundii, the rare Arachnanthe Cathcartii, some good white Lælia anceps, L. × Mary Colman, Spathoglottis × aureo-Vieillardii, Cattleya Trianæ Purple King, C. T. alba, Cymbidium grandiflorum punctatissimum, &c. Awards of Merit were given to Spathoglottis × Colmanii (aureo-Vieillardii × aurea Gatton Park var.), having yellow flowers spotted with purple, to Dendrobium × Othello Colossus, the noble form figured on page 72: and to D. × Brodiei (Dominianum × Wiganiæ), described at page 81 of our present issue.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), was awarded a Silver-gilt Flora Medal for a fine group, containing some good varieties of Odontoglossum crispum, Cattleya Trianæ, and Lycaste Skinneri, in excellent condition, the latter including a good L. × Balliana, L. Skinneri alba with twenty flowers, the blush-white L. S. Enchantress, and several other beautiful forms of the species. There was also a fine plant of L. × Balliæ bearing numerous rich crimson flowers.

G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), received a Silver Flora Medal for a fine group of Cypripediums, consisting chiefly of hybrids of C. villosum and C. Boxallii in excellent condition. An Award of Merit was given to C. × G. F. Moore var. punctatissimum, a well-shaped flower having the dorsal sepal densely spotted with deep purple.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), staged a pretty little group, which gained a Silver Banksian Medal. It consisted principally of Dendrobiums, and included the beautiful yellow D. × Ophir, D. × Melpomene, D. × xanthocentrum, D. × Aspasia, two fine D. × Wiganiæ xanthochilum, together with the richly-coloured Cypripedium × Watsonianum. An Award of Merit was given to the handsome Lælio-Cattleya × Myra Burford var. (C. Trianæ × L. flava), and a Botanical Certificate to Maxillaria arachnites.

W. M. Appleton, Esq., Weston-super-Mare, showed several interesting hybrid Cypripediums, an Award of Merit being given to C. × Edithæ Rowena (Chamberlainianum × bellatulum), having the flowers densely spotted with dark purple.

H. S. Goodson, Esq., Putney (gr. Mr. Day), received an Award of Merit for a fine plant of Lycaste costata bearing eight ivory white flowers.

F. Menteth Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), showed Cypripedium insigne Bohnhoffianum, C. × aureum Surprise, the handsome Lælio-cattleya × Myra imperialis, and Lycaste Skinneri Fascinator, a very beautiful delicately tinted form which gained an Award of Merit.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cattleya chocoensis Westfield var., Cypripedium × Mons. de Curte, C. × W. E. Dickson, C. × Miss Marian Sillem, having a pretty white flower covered with purple spots, and C. Boxallii nigricans, the latter a very dark form, which received an Award of Merit.

H. Druce, Esq., The Beeches, Circus Road, St. John's Wood (gr. Mr. Walker), showed a small group of Cypripedium villosum and its hybrids.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), showed three good forms of Cattleya Trianæ, C. × Miranda, Cypripedium × Mrs. Wm. Mostyn, C. × aureum Surprise, C. × a. virginale, and C. × a. Hyeanum.

C. L. N. Ingram, Esq., Elstead (gr. Mr. Bond), showed Cattleya × rubens and Lælia × canariensis (harpophylla × anceps).

R. I. Measures, Esq., Camberwell (gr. Mr. Smith) showed an interesting series of cut Cypripediums.

W. Parmenter, Esq., The Limes, Braintree (gr. Mr. Buckland), showed a nearly-white form of Lælia Jongheana.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), sent Cypripedium × Ajax and Lælia anceps Schroederiana.

R. G. Thwaites, Esq., The Woodlands, Streatham (gr. Mr. Black), sent two forms of Lælio-cattleya × Oriens (L. Cowanii × C. Trianæ) a hybrid described at page 80 of our present issue, and the rich yellow Dendrobium × chessingtonense.

H. Whateley, Esq., Kenilworth, sent some pretty Odontoglossums.

C. K. Wild, Esq., New Eltham (gr. Mr. Usher), showed a fine plant of Cattleya amethystoglossa.

Messrs. J. Cypher & Sons, Cheltenham, gained a Silver-gilt Flora Medal for a handsome group, containing a beautiful series of Lælia anceps varieties, a splendid Cypripedium × aureum Hyeanum in the best of condition, C. × a. virginale, C. insigne and its varieties, C. × Leeanum varieties, and other Cypripedes, Sophronitis grandiflora, Cattleya Trianæ,

Lycaste Skinneri, the rare Odontoglossum aspidorhinum, and other Odontoglossums, Ada aurantiaca, Masdevallias, Phalænopsis, Dendrobiums, &c.

Messrs. Sander & Sons, St. Albans, also received a Silver Flora Medal for an effective group, containing the handsome Cypripedium × Rajah (triumphans × callosum), C. × Pallas (Godefroyæ × Hookeræ having a purple flower with red spots, Cattleya Trianæ, Purple King, the rare Eulophia Saundersiana, a profusely-flowered Platyclinis valida, the handsome Odontoglossum × loochristiense nobilius and other plants. A First-class Certificate was given to Cymbidium × Holfordianum (eburneum × grandiflorum), a beautiful hybrid bearing an inflorescence of four flowers of intermediate character, the sepals and petals being ivory white, slightly tinged with emerald green, and the lip cream-coloured with a row of purple spots at the margin and base.

Messrs. J. and A. A. Macbean, Cooksbridge, staged an effective group, which received a Silver Banksian Medal. It contained the handsome scarlet Epiphronitis × Veitchii, Odontoglossum crispum Anak, and other fine Odontoglossums, and many white Lælia anceps varieties, also L. a. Fascinator, a large and richly-coloured flower approaching L. a. Chamberlainiana, but with a purplish feather on the petals. It gained an Award of Merit.

Messrs. Hugh Low & Co., Enfield, also received a Silver Banksian Medal for a good group, containing many varieties of Cattleya Trianæ, a nearly white Vanda Amesiana, Miltonia × Bleuana, Dendrobium crassinode, D. superbiens with three spikes, D. aureum, and some good Cypripediums, C. × chrysotoxum having a large yellowish flower with white apex to the dorsal sepal.

M. Ch. Vuylsteke, Loochristi, Ghent, staged a choice group of hybrid Odontoglossums, which gained a Silver Banksian Medal. It included a good O. × Wiganianum, O. × ardentissimum, and other fine things of comparatively recent origin.

M. A. A. Peeters, Brussels, sent three forms of the handsome hybrid Odontoglossum × Lambeauianum, one of which gained a First-class Certificate.

Messrs. Charlesworth & Co., Bradford, showed four interesting hybrids, Lælio-cattleya × harpo-aurea, Odontoglossum × Adriano-triumphans, O. × Hallio-Adrianæ, and Cymbidium × eburneo-giganteum, the latter gaining an Award of Merit. The flowers are large, cream-coloured, and marked with red-brown on the lip.

Messrs. James Veitch & Sons, Chelsea, exhibited the pretty little Sophrolælia × Valda, and two plants each of S.-l. × Psyche and the handsome Sophrocattleya × Saxa.

Messrs. Heath & Sons, Cheltenham, showed a few good Cypripediums and Dendrobiums.

Messrs. Sutton & Sons, Reading, exhibited a pan of a pretty little Orchid from China, which proves to be Pleione yunnanensis. It is figured on page 81.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent spikes of Oncidium pubes, Gongora atropurpurea, and a fine form of Odontoglossum cirrhosum.

DIPLOMA AWARDS.

The special competition for Diplomas was as follows :—

CATTLEYA TRIANÆ.—First Diploma to C. T. var. "The Premier," shown by J. Bradshaw, Esq. Second Diploma to C. T. Westonbirt var., from Major G. L. Holford.

HYBRIDS OF C. TRIANÆ.—No exhibit.

LELIA ANCEPS (WHITE).—First Diploma to L. a. Schroederiana, sent by Baron Schroder, J. Colman, Esq., and Major Holford. Second Diploma to L. a. Hollidayana, shown by De Barri Crawshay, Esq.

CYPRIPEDIUMS (SPECIES).—First Diploma to C. Boxallii var. nigricans, shown by F. Wellesley, Esq.

CYPRIPEDIUMS (HYBRIDS).—First Diploma to C. × aureum virginale, from J. G. Fowler, Esq., and G. F. Moore, Esq. Second Diploma to C. × Mrs. Wm. Mostyn, from G. F. Moore, Esq., and J. G. Fowler, Esq.

The Society's paintings bearing on the subjects were also shown, and made a fine display.

The following notes relating to Orchids appear in the report of the Scientific Committee of the same meeting :—

MR. A. SUTTON, F.L.S., showed specimens of a species of Pleione, P. yunnanensis (Rolfe), which had been sent to them by a missionary from China, and had been grown on by them. The greater number of species of this genus are native in the mountains of India, but this came from further to the north-west, and was taller than the majority of the Indian species. On the motion of DR. MASTERS, seconded by MR. DRUERY, a Botanical Certificate was unanimously awarded to this plant. In some of the reports the plant is called "P. pogonioides," to which species it was at the meeting doubtfully, and from memory, referred.—ED.

Orchids with Spots on Leaves, &c.—E. F. CLARK, Esq., of Chamonix, Teignmouth, sent parts of Orchids, chiefly Cattleyas, which were spotted and deformed in growth. While fungi were certainly present in some of the spots, it was thought that the primary cause of the trouble lay not so much with the fungus as with a too wet compost and lack of air to the roots, and possibly a too damp atmosphere.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on February 8th last, when there was a very good display of Orchids, and the awards included five First-class Certificates and six Awards of Merit.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), received an Award of Merit for Cypripedium × The Duchess, and First-class Certificates for C. × Mrs. Mostyn Chardwar var. and C. × chrysotoxum var. Victor.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), received a First-class Certificate for Cypripedium × Mrs. Mostyn Chardwar var., and an Award of Merit for C. × Charles Turner.

J. H. Craven, Esq., Keighley, Yorks. (gr. Mr. Corney), received a First-class Certificate for Cattleya Triana Lady Brunner.

E. Rogerson, Esq., Didsbury (gr. Mr. Price), received a Vote of Thanks for an interesting group, and Awards of Merit for Cypripedium × Rogersonianum and C. × aureum var. Mrs. E. Rogerson.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), received an Award of Merit for "Cypripedium × Adrastus superbum Vine House var."

S. Briggs-Bary, Esq., Accrington (gr. Mr. Wilkinson), staged an interesting group, to which a Vote of Thanks was accorded.

Messrs. James Cypher & Sons, Cheltenham, staged a very beautiful group, which received a Silver Medal, an Award of Merit going to a pretty hybrid derived from Cypripedium insigne Chantinii × C. Godefroyæ leucochilum.

Messrs. Hugh Low & Co., Enfield, received a First-class Certificate for C. × chrysotoxum var. Victor.

Messrs. J. Cowan & Co., Gateacre, and Messrs. Heath and Sons, Cheltenham, were accorded Votes of Thanks for interesting groups.

At the meeting held on February 22nd there was again a good display, the awards on this occasion including five medals, two First-class Certificates, and two Awards of Merit.

R. Le Doux, Esq., West Derby (gr. Mr. Davenport), exhibited a fine group, containing some well-grown Lycastes, which received a Silver Medal.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Schill), received a First-class Certificate for Cypripedium × Euryades var. magnificum, and Awards of Merit for C. villosum × C. insigne Sanderæ and C. × Beatrice Leake.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Smith), received a First-class Certificate for C. × Amy Leemann.

Philip Smith, Esq., Ashton-on-Mersey, received a Bronze Medal for a small collection of choice plants.

W. Thompson, Esq., Stone (gr. Mr. Stevens), also received a Bronze Medal for a small choice collection.

Messrs. J. Cowan & Co., Gateacre, received a Silver Medal for a good group.

Messrs. J. Cypher & Sons, Cheltenham, also received a Silver Medal for a good display of plants.

Mr. S. Allen and Mr. D. McLeod were accorded Votes of Thanks for interesting groups.

ODONTOGLOSSUM GRANDE.

MR. C. W. FINDLOW, gardener to A. J. Oakshott, Esq., J.P., Oaklands, Lower Bebington, Birkenhead, contributes an interesting note to a recent issue of the *Journal of Horticulture* respecting his method of treatment of Odontoglossum grande: "During the growing season," he says, "we place them at the warmest end of the intermediate house, and I find occasional doses of weak manure water are beneficial, also damping amongst the pots with soot water. We leave them here until the flowers begin to expand, then remove them to the warmest end of the cool house, where they flower well. Here they remain during the resting period, keeping them on the dry side, never allowing them to get dust dry when growth is well started. Move them back to the Intermediate house again. They improve here each year. We have plenty of bulbs 7in. and 8in. in circumference, and have had nine flowers on one spike." The treatment appears to be highly successful, for one plant is mentioned as being in a 10½ inch pan, carrying forty-eight fully-developed blooms, some being five to six inches across.

ORCHIDS: THEN AND NOW.

MANY years ago the *Saturday Review*, in a brilliant article on Orchids, declared that there was one great advantage about them, and that was that they could never be hybridised, and my old friend, Mr. James Bateman, the father of the cool system of growing Orchids, once told me, with much emphasis, that no hybrid monstrosity should ever enter his Orchid houses. What would these authorities say now?

Allow me to congratulate you on the yearly increase of interest and value in the contents of the *Orchid Review*, and especially in the evidence there being stored as to the best materials and methods of growing Orchids, which makes one believe that these good-natured plants can be happy in almost any kind of compost, and under opposite systems of treatment.

C. B. LUCIE-SMITH.

The Acacias, Worthing.

PAPHIOPEDILUM × STATTERIANUM

We are now able to give a figure of the handsome Paphiopedilum × Statterianum, whose history was given at page 68 of our last volume. It is reproduced from a painting kindly sent by Francis Wellesley, Esq., Westfield, Woking. Its parentage is P. Spicerianum ♀ and P. × vexillarium ♂, and it may be remarked that it is most like the former in shape but the latter in colour. The markings on the staminode and dorsal sepal are rich purple, the latter having a deep purple band up the centre, a

Fig. 11. Paphiopedilum × Statterianum.

green basal area, and a white margin. The petals are dull purple with a green base, and the lip is suffused with dull purple in front. The foliage is prettily tessellated. It is a very beautiful hybrid, as may be judged from the fact that it gained a First-class Certificate from the R.H.S. in October 1893, when exhibited by T. Statter, Esq., after whom it was named.

ORCHIDS IN SEASON.

SEVERAL handsome Orchids are sent from the collection of G. Singer, Esq., Coundon Court, Coventry. Paphiopedilum × Mrs. William Mostyn, Chardwar var., is a fine thing, having a great deal of the villosum shape and shaggy ovary, but the colour nearer that of P. Boxallii atratum, though rather lighter in colour. P. × Minos coundonense approaches the Leeanum type of flower, and has the lower part of the petals and dorsal sepal profusely spotted with purple-brown, a few of the lower spots on the sepal being larger than usual. P. × aureum Hyeanum is a large unspotted form with a light purple suffusion, while P. × a. Œdippe has the greater part of the dorsal sepal purple, the margin white, and the petals green, densely spotted with dusky brown. P. × Olivia has now greatly improved in size, and is a beautiful white flower, suffused with light purple, and slightly spotted on the petals, thus showing a large amount of the niveum character. The flowers are all very finely developed, and afford evidence of excellent culture. Lastly must be mentioned the beautiful P. × G. Singer, raised by Messrs. Hugh Low & Co. from P. × conco-bellatulum and P. insigne Sanderæ. The flower has retained most of the shape of the first-named parent, while the ground colour is soft greenish yellow, shading off to white at the apex, and prettily dotted with purple, this character also extending to the petals.

A very fine form of Cattleya Trianæ is sent from the collection of Mrs. Fielden, Grinston Park, Tadcaster, by Mr. Clayton. The sepals and petals are bright rosy lilac, the latter being over 2¾ inches broad, and the front lobe of the lip crimson purple with the throat deep yellow.

A good flower of the beautiful Paphiopedilum × aureum is sent from the collection of Francis Wellesley, Esq., Westfield, Woking, by Mr. Hopkins. The colour is a pleasing shade of greenish yellow. A flower of P. Boxallii nigrum is also sent, the flower being of moderate size, and the greater part of the dorsal sepal blackish purple.

A beautiful series is sent from the collection of Major Holford, Westonbirt, by Mr. Alexander. It contains three beautiful yellow Dendrobiums, × Ophir, × Melpomene, and × Wiganiæ xanthochilum, the former distinguished by some dull crimson pencilling near the base, and the others by having a large maroon blotch on the disc; the last named, however, has a larger flower and more undulate petals. There is also an albescence of the beautiful D. × Schneiderianum, two fine flowers of Sophronitis grandiflora, Cybidium × eburneo-gigantum, the fine C. × Lowio-grandiflorum, and Lælio-cattleya × Myra Charlesworth's var., the latter blotched Odontoglossum × Andersonianum × Westonbirt var., and four beautiful Paphiopedilums. P. concolor Sanderæ is a charming bright

yellow form, very regularly spotted with brown on the petals and dorsal sepal. P. × Scipio is a fine hybrid, showing strains of P. insigne in the dorsal sepal and of P. villosum in the lip petals and hairy ovary. P. × aureum Hyeanum is a very large, yellowish-green flower, with some brown suffusion on the petals and lip, and the greater part of the dorsal sepal white, while P. × a. Œdippe differs in having a large amount of purple on the dorsal sepal, and many minute dusky dots on the petals.

Several beautiful flowers are sent from the collection of E. Rogerson, Esq., Didsbury, by Mr. Price, including a light form of Dendrobium × Cybele, from D. nobile albiflorum × Findlayanum, one of D. × euosmum (D. n. Amesiæ × endocharis) with a light maroon disc on the lip, a seedling form of D. nobile, Paphiopedilum × aureum Rogersonianum, having the basal area of the dorsal sepal greenish, slightly tinged with purple, and a narrow purple median band, and P. × Rogersonianum, a P. Chamberlainianum hybrid, of which the second parent is unknown. The basal half of the dorsal sepal is deep purple and the upper part lined with the same, while the petals are also copiously spotted with purple. The two latter received Awards of Merit at Manchester on February 8th last.

Another interesting lot is sent from the collection of H. T. Pitt, Esq., Rosslyn, Stamford Hill, by Mr. Thurgood, these including a very fine flower of the richly-coloured Lycaste × Balliæ superba, the beautiful Chondrorhyncha Chestertoni, a Paphiopedilum marked "exul × Calypso" which seems too much like the former, Dendrobium × melanodiscus and the chaste D. Wardianum albens, the rare D. × Roeblingianum, Eulophia virens, Angræcum Leonis, and an inflorescense of Platyclinis uncata from a plant bearing 67 racemes.

Lastly must be mentioned a beautiful series from the collection of Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz). P. × Kubele is the interesting hybrid in which no less than five species are combined. P. barbatum, villosum, insigne, philippinense and superbiens as described at page 271 of our ninth volume. It is a fine flower with a broad striped and spotted dorsal sepal, and broad acute petals, suffused with purple-brown and spotted at the base. A form of P. × Oakes Ames, raised in the collection from P. Rothschildianum ♀ and P. ciliolare ♂, has a twin-flowered scape, and the flowers are intermediate in character and very handsome. The seeds were sown in April, 1896. P. × Lachesis was derived from P. × Crossianum ♀ and P. × marmorphyllum ♂, and its appearance led to some very curious speculations (*O.R.*, iv., pp. 104, 105) which are not yet cleared up. A form of P. × Colonel Marchand has also been raised in the collection from P. × superciliare ornatum ♀ and P. concolor Regnieri ♂. It is a pretty little hybrid, having flowers most like the pollen parent in shape, and both the dorsal sepal and petals are closely lined with rows of

purple dots on a yellowish ground. The remaining flowers are very fine P. × aureum virginale, P. × Olivia, P. × Helen II., in which the dorsal sepal is very regularly spotted with purple on a white ground, and two diverse forms of P. × Valletii, in which the characters of P. × Lathamianum and P. Boxallii are combined. We should like to add that Mr. Young's records are kept with the most praiseworthy accuracy, and it is always a pleasure to work under such conditions.

PAPHIOPEDILUM MASTERSIANUM.

THE habitat of this handsome species has hitherto been mysterious. Messrs. Veitch remark: —"We find nothing recorded of the habitat of this very distinct Cypripede beyond the statement that it is of Sondaic origin, and, although Prof. Reichenbach adds that he was indebted to us for the materials for description, the plant was not imported by us, but was received from the Royal Gardens at Kew" (*Veitch Man. Orch.*, iv., p. 39). Mr. Day painted it as Messrs. Veitch's in 1885 (*Ill. Hort.*, xlv., t. 5), and remarked that Reichenbach's description was prepared from a flower from the self-same plant, which was the only one in Europe, adding: "I am told that Messrs. Veitch received it from Kew, and that it came from Java." A subsequent note adds that "in June there were two plants of this in flower at Mr. W. Bull's, of which I bought one." Twelve years ago the species was figured in this work from a rather poor flower, the only one then accessible (*O.R.*, ii., p. 17, fig. 4), where the remark occurs: "It is not known to be a native of Java, from whence Messrs. Hugh Low & Co. have imported it." In the face of these records I was somewhat puzzled not to find any mention of the species in the recently published "Orchideen von Java," by J. J. Smith (*Fl. von Buitenz.*, vol. vi.). Hallier, it is true, in 1897, had briefly mentioned the plant as a native of Amboina (*Ann. Jard. Bot. Buitenz.*, xiv., p. 36), but I had overlooked the record until repeated by Pfitzer. Now it is confirmed. In an interesting paper entitled *Die Orchideen von Ambon*, recently published by Mr. Smith, I find three Amboina records cited (p. 7), as follows: —"Salhoetoe (Teysmann), Toena Teysmann, Micholitz), and Hoetoe Moretoe (J. J. Smith)." We may therefore conclude that the original record was erroneous. It would be rather interesting to trace the numerous errors of this kind that are on record to their source. Mr. Day's painting was not made till 1885, six years after it was described, and he wrote: —"I have never seen it before and am greatly pleased with it. I wish I had come across a few hundred plants of it when I was hunting for ferns on Mt. Geder, three or four years ago. I should have paid the expenses of my trip then, Japan included."

R. A. R.

ORCHID CULTURE IN JAVA.

Orchid-growing seems to be a world-wide occupation. We have received a long and interesting letter from Mr. E. Connell, manager of a coffee, tea, and cinchona estate at Loemadjang, East Java, who grows a large collection of native Orchids, as well as some South American species, which he is trying to establish. He remarks:—"I have a few Odontoglossums, Lælias, Cattleyas, Oncidiums, Lycastes, all growing in the open. I am experimenting with these South American roots, growing some on blocks, and tying the blocks to a tree where the plant has to stand the heavy monsoon rains now on, though sheltered from direct downpour and sun. They show signs of making new growths, so I am hopeful of acclimatising them. My elevation is 2,700 feet above sea level, and temperature varies from 57 to 81 F. All my Orchids are growing under living shade, which I grow specially for the purpose, bringing those that bloom into the verandah, and I keep a list of the varieties that bloom monthly. Perhaps it would be of interest to you if I wrote you an account of the *modus operandi* employed on my Orchid farm, and the materials and methods I employ to keep about 8,000 plants growing, scattered about all over my garden, with the aid of one Javanese so-called gardener." We hope to receive the promised account, and feel sure it will be read with interest by many who, unlike Mr. Connell, have to manufacture a climate before attempting the culture of these beautiful plants.

AN EARLY ORCHIS.

It is rather surprising to find an Orchis flowering in Norfolk, in the open air, as early as the end of February, but Dr. Gunther has brought to Kew a fine inflorescence of Orchis longibracteata, bearing eighteen expanded flowers, with such a history. The bulb was brought from the Riviera some time ago. On looking the matter up I find that Barla, who figures the species under the name of Barlia longibracteata, Parl. (*Ic. Orch. Alpes-marit.* p. 30, t. 25), gives the time of flowering in its native home as January to March. Lindley, who figured the plant in 1819 (*Bot. Reg.*, t. 357), calls it the Winter Orchid of Sicily, and remarks that Mr. Swainson, of Liverpool, who introduced it to cultivation, observed that in its native home it is the first that flowers among the many little known species found in Sicily, generally opening its blossoms in the beginning of February, the depth of a Mediterranean winter. The plant is also known under Reichenbach's name of Aceras longibracteata. The plant may be briefly described as a stout Orchis, about a foot high, with a spike of large flowers, having green sepals and petals, spotted with brown on the lateral sepals, and a four lobed lip, of a peculiar shade of lilac-blue, becoming dull purple-blue

towards the apex. Its separation from Orchis is due to some slight differences in the structure of the pollinia. The species is widely diffused in the Mediterranean region, from Cyprus to the Canary Islands, and is also found in North Africa.

R. A. ROLFE.

VARIATION OF LÆLIA ANCEPS SANDERIANA.

IT is now possible to record another case of variation similar to that observed by Mr. Bound two years ago (*O. R.*, xii. p. 78). A white form of Lælia anceps in the collection of Miss Sinnock, Downford, Hailsham, Sussex, has produced a scape of four flowers, two of which have a slight purple patch on the front lobe of the lip, while in the other two the whole of the lobe is pure white, these latter corresponding fairly well to L. a. Stella. Miss Sinnock remarks that a similar plant had last year quite white blooms, but this year each of the flowers has a purple blotch on the lip and they are also distinctly larger than before.

CALANTHE × VEITCHII SPORT.

MR. W. SWAN writes to the *Gardener's Chronicle* (1906, i. p. 14) to say that "at a meeting of the Egham and District Gardeners' Mutual Improvement Association, a plant of Calanthe × Veitchii was exhibited that in a very important particular had diverged from the normal habit of this plant. The specimen grew from just one pseudobulb, that had, early in spring, been put into a five inch pot. This had made two growths, which had developed into pseudobulbs of large size, each one carrying a flower spike of about three feet in length. The peculiarity of this, however, was that while one spike bore flowers of the usual rosy pink colour, the other spike had flowers of a very pale flesh colour. The contrast between the two spikes was great, and the novelty was much admired by the large company present. The plant was exhibited by Mr. W. Wilkins, Park House Gardens, Englefield Green."

NOTES.

Two meetings of the R. H. S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during March, on the 6th and 20th, when the Orchid Committee will meet at the usual hour, twelve o'clock noon. The subjects chosen for the special competition on these dates are:—March 6th, Dendrobiums aureum and nobile with their hybrids; March 20th, Lycaste and Lycaste hybrids.

The next meeting of the Manchester and North of England Orchid

Society will be held at the Coal Exchange, Manchester, on March 22nd. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

A flower of the handsome Dendrobium × Othello Colossus, which received an Award of Merit from the R.H.S. on February 13th, is sent from the collection of Jeremiah Colman, Esq., Gatton Park, Reigate, by Mr. Bound. It is of excellent shape, and all the segments are very broad, and suffused with rose, except on the lower halves of the petals, and round the very large maroon disc of the lip, which parts are white. A flower of the handsome Cymbidium grandiflorum punctatissimum is also sent. Mr. Bound remarks that he never has trouble with the flowers of this species going off, and he attributes his success to giving the coolest possible treatment, combined with keeping the plants well up to the glass during the winter, so as to obtain the maximum amount of light while the spikes are developing.

With respect to the article on Odontoglossum platychilum which appeared at page 61, it is interesting to find that Messrs. Sander received an importation some time ago, and that two plants of it are in the Kew collection. This removes it from the ranks of lost species, and we hope to see flowers of it again before long.

A recent issue of *Die Gartenwelt* gives a figure of a fine lot of Lælia anceps in the establishment of Mr. C. Stoldt, Wansbeck-Marienthal, Germany (pp. 235-236).

Indian Gardening, for January 13th (p. 29), calls attention to the reported occurrence of Cypripedium × Arthurianum as a wild plant, and makes some deductions as to its possible occurrence somewhere with C. insigne. It is an old report, which appeared in our pages long ago, but we could never get any confirmation, and fear that there is nothing in the story.

ORCHID PORTRAITS.

ANGRÆCUM SESQUIPEDALE.—*Gard. Mag.*, 1906, p. 95, with fig.

CATASETUM × SPLENDENS PUNCTATISSIMUM.—*Garden*, 1906, i., p. 88, with fig.

CATTLEYA BOWRINGIANA.—*Gard. Chron.*, 1906, i., p. 114, fig. 45.

CYMBIDIUM × HOLFORDIANUM.—*Gard. Mag.*, 1906, p. 130, with fig.

CYPRIPEDIUM × ALCIBIADES MAGNIFICUM.—*Gard. Ill.*, 1906, p. 28, with fig.

CYPRIPEDIUM CAUDATUM.—*Journ. Hort.*, 1906, i., p. 90, with fig.

CYPRIPEDIUM × THALIA VAR., MRS. FRANCIS WILLESLEY.—*Gard. Mag.* 1906, p. 84, with fig.: *Journ. Hort.*, 1906, i., p. 111, with fig.

CYPRIPEDIUM × VILLE DE PARIS.—*Gard. World*, 1906, p. 99, with fig.

DENDROBIUM PHALAENOPSIS VAR. LOUISA DEANE.—*Journ. Hort.*, 1906, i., p. 90, with fig.

EULOPHIA NUDA, LINDL.—*Bot. Mag.*, t. 8057.

HABENARIA PROCERA, Lindl.—*Gartenwelt*, × p. 246, with fig.

LAELIO-CATTLEYA × HELENA WESTFIELD VAR.—*Gard. World*, 1906, p. 129, with fig.

LISTROSTACHYS PELLUCIDA, Rchb., f. *Rev. Hort. Belge.*, 1906, p. 38, fig. 11.

MILTONIA VEXILLARIA VAR. EMPRESS AUGUSTA VICTORIA. *Gard. Chron.*, 1906, i., p. 114, with suppl. plate.

ODONTOGLOSSUM, × ARDENTISSIMUM VAR. THEODORA. *Gard. Ill.*, 1906, p. 27, with fig.

PHAIUS TUBERCULOSUS SUPERBUS. *Journ. Hort.*, 1906, i., p. 155, with fig.

PHALAENOPSIS SCHILLERIANA.—*Journ. Hort.*, 1906, i., p. 133, with fig.

POLYSTACHYA AFFINIS, Lindl. *Rev. Hort. Belge.*, 1906, p. 40, fig. 13.

POLYSTACHYA LAURENTII, De Wild. *Rev. Hort. Belge.*, 1906, p. 39, fig. 12.

POLYSTACHYA MYSTACIDIOIDES, De Wild.—*Rev. Hort. Belge.*, 1906, p. 41, fig. 14.

CORRESPONDENCE.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of botanical seedling work to name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily.)

E. van H.—A good round form of Odontoglossum × loochristense, a natural hybrid between O. crispum and O. triumphans, which has occasionally appeared of late years among importations of O. crispum from a locality where the two species grow together.

J. C. H.—Oncidium maculatum, Lindl.; Brassia caudata, Lindl., or a very closely allied species; a small form of Brassavola nodosa, Lindl.; Xylobium Stachyopodium, Hensl.

F. W. I.—Oncidium sphacelatum and an Epidendrum near Hartii, but species uncertain from a single flower and without any clue to the habitat.

ERRATUM.

The figure of Odontoglossum × Lambeauianum var. exquisition at page 57 should be marked fig. 7 not 6.

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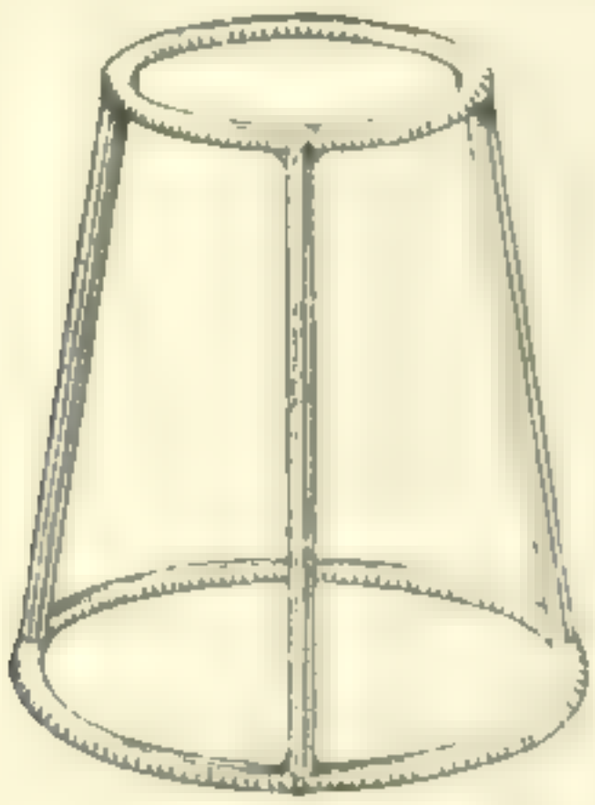

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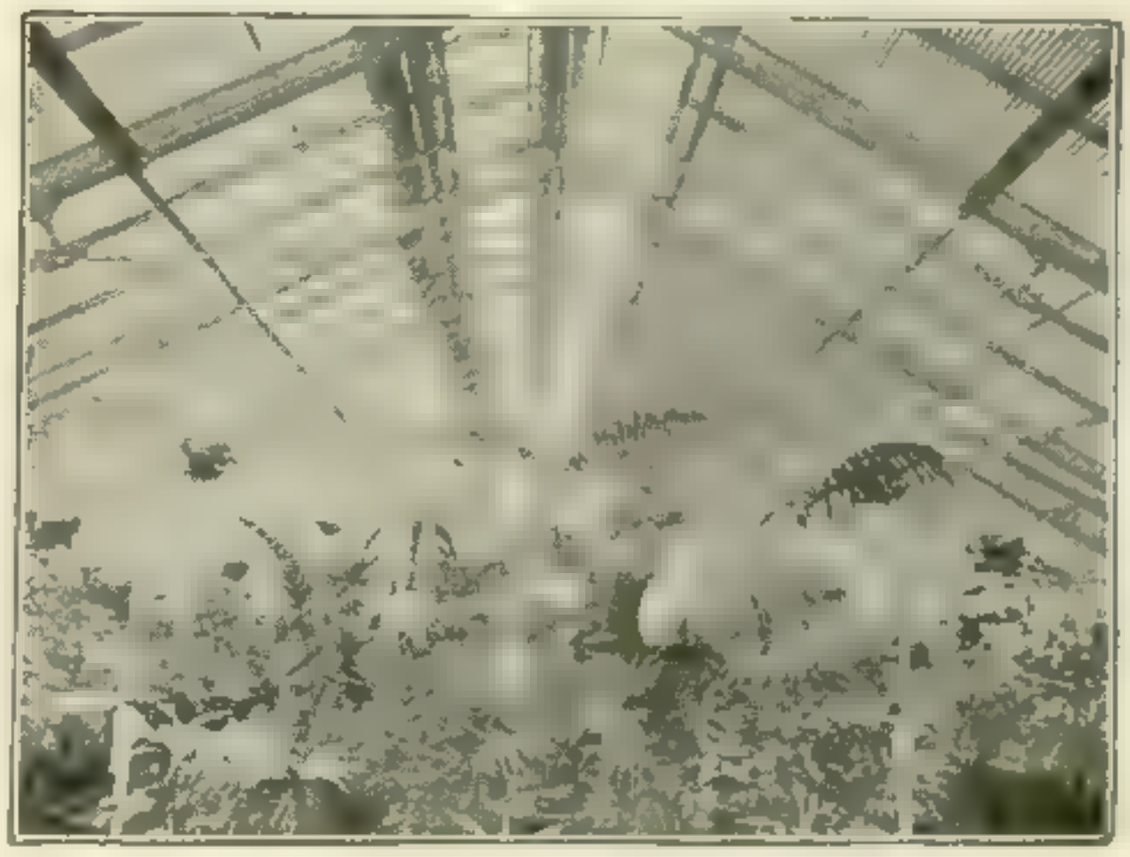

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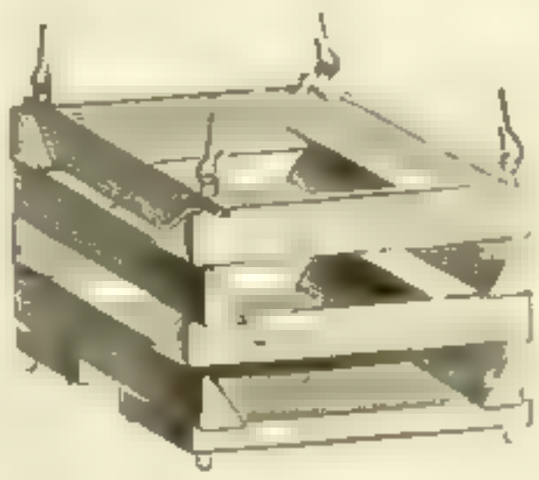

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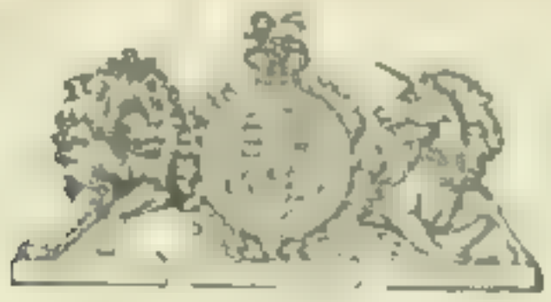

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THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

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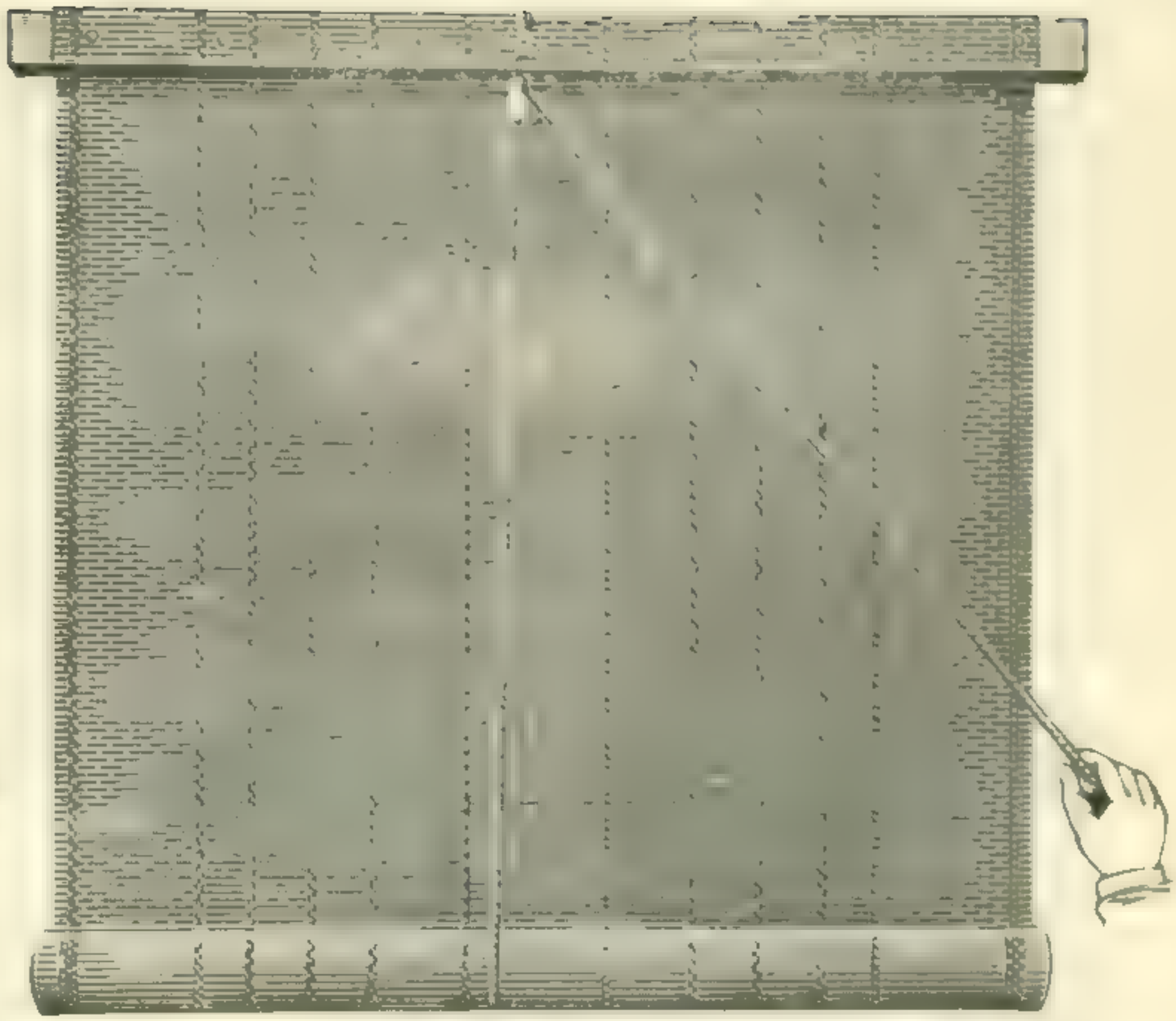

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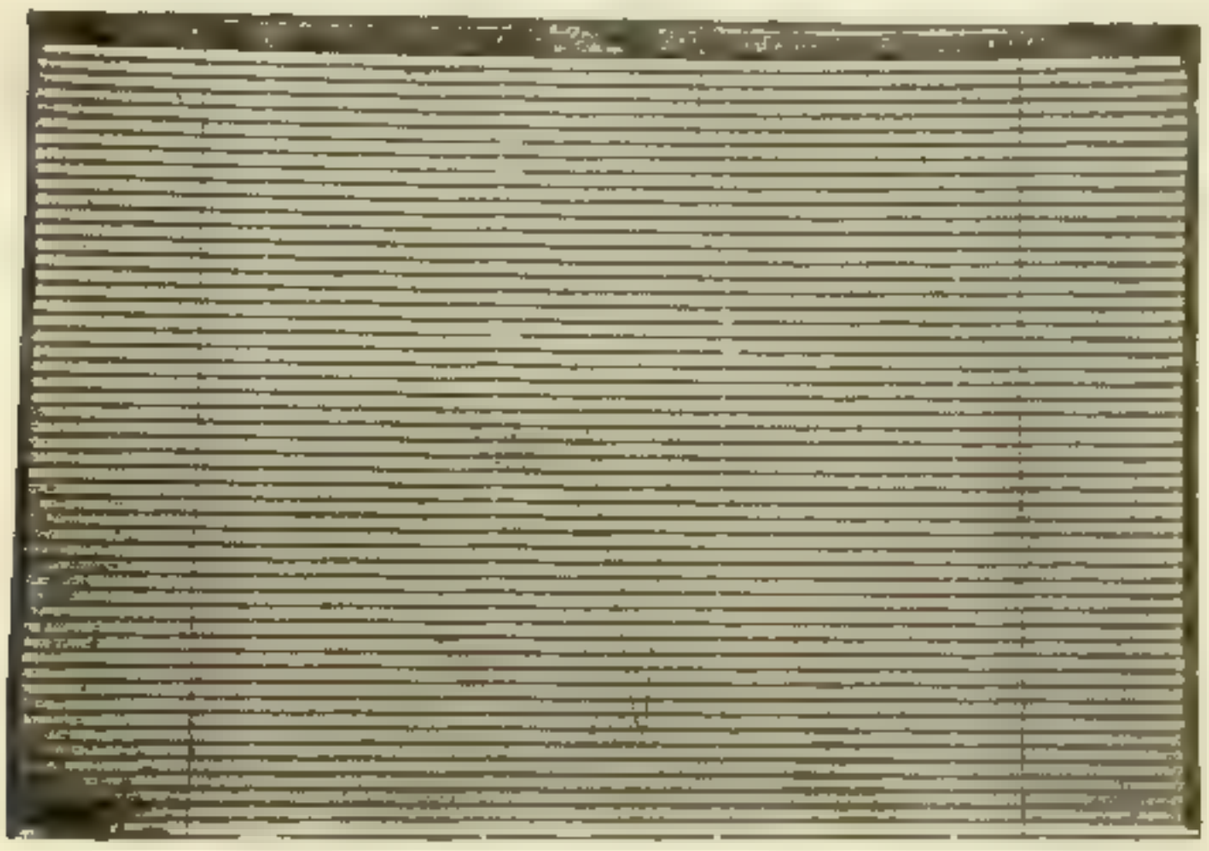

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THE ORCHID REVIEW.

VOL. XIV.] *APRIL*, 1906. [No. 160.

THE MENDELIAN "LAWS" OF INHERITANCE

THE meeting of the Scientific Committee on March 20th was devoted to an exposition of the Mendelian Theory of Inheritance, by Mr C. C. Hurst, F. L. S., and was held in the Council Room, numerous Fellows interested in the subject being also present.

Mr. Hurst alluded to the experiments of Mendel in hybridising peas, when it was observed that of two given characters in the parent one was dominant over the other in the hybrid. Thus he crossed peas having round and wrinkled seeds, yellow and green cotyledons, purple and white flowers, tall and dwarf stems, inflated and constricted pods, green and yellow pods, axial and terminal flowers, and found the first named character dominant over the other, which latter he called recessive. This was termed the "Law of Dominance," and Mr. Hurst remarked that in numerous characters in plants and animals he had found it to hold good; in Orchids, amongst others, sap-coloured being dominant over white flowers, and spotted over striped.

When the hybrids were self-fertilised Mendel found that segregation or splitting of the characters took place, in the ratio of three dominants to one recessive, thus the hybrids between yellow and green peas when self-fertilised gave on the average 75 per cent. yellow and 25 per cent. green, both types often appearing in the same pod. This was termed the "Law of Segregation," and Mr. Hurst had also confirmed this in his experiments with plants and animals, the recessive character after "skipping a generation" reappearing apparently unchanged.

In the third generation Mendel found that the extracted recessives bred true, without reversion to their dominant ancestors, e.g., the green peas extracted from the yellow-green hybrids bred true greens, with no trace of yellow. The yellow dominants were tested in the same way, and in the second generation two types of yellow were found, one that bred true, and one that retained the hybrid characters, and these were in the ratio of one to two. These were termed respectively pure dominants and hybrid dominants. The experiments were continued to the seventh generation,

and it was found that while the recessives and pure dominants each bred true, the hybrid dominants segregated again into one recessive and three dominants, one of the latter again being pure while two remained hybrid. This was termed the "Law of Purity," and Mr. Hurst had also found in his experiments with plants and animals that the extracted recessives bred true, with no trace of the dominant ancestors.

THE MENDELIAN THEORY.

Mendel did not offer any explanation of the facts of dominance, nor has any satisfactory one yet been propounded. He, however, put forward a simple theory, namely the segregation of the gametes or germ-cells of the hybrid, so that on the average one-half of the gametes carry the dominant character and one-half the recessive: no gamete carrying both. This is known as the theory of gametic segregation or gametic purity. Thus the union of two gametes carrying the recessive character would result in a pure recessive, and the union of two carrying the dominant character would result in a pure dominant, while the union of dominant with recessive, or the reverse, would again result in hybrids, in which, however, the recessive character would be masked, and thus they would *appear* dominants. These are therefore termed "Hybrid Dominants." On the law of averages, each kind of union will occur with equal frequency, hence the result of twenty-five per cent. pure dominants, fifty per cent. hybrid dominants, and twenty-five per cent. pure recessives, which is in close agreement with the results obtained by Mendel. The above explanation deals with a single character only, but as the gamete or germ-cell may contain more than a single character, the actual problem is one of great complexity.

As to the practical application of the Mendelian laws, Mr. Hurst considers that when the points desired by the breeder coincide with the Mendelian characters a knowledge of these laws will enable him to get what he wants in the shortest possible time, as recessives breed true at sight, though several dominants might have to be bred from before the pure dominant was found. But if the desired point combined several Mendelian characters a much larger number of individuals will be required to secure the pure form, but once found it will breed true at once. Thus the breeder must rely on the assistance of the Mendelian experimenter.

The facts of dominance show that the outward appearance of an individual is often no guide at all to a knowledge of its breeding potentialities, and that a knowledge of its gametic constitution is the only guide to its heredity, and this can only be secured by Mendelian analysis.

The result of recent experiments show that the law of dominance is apparently not universal, for in some cases the hybrid dominants do not exactly resemble the pure dominant parent, there being some traces of the recessive character, the dominance being incomplete. In other cases the

hybrid appears to be intermediate, and in a few cases the hybrid is different from either parent, and perhaps a reversion. These exceptional cases have not yet been fully worked out.

Mr. Hurst illustrated his lecture with examples of peas, palm and fern leaved Primulas, two remarkably diverse forms of Paphiopedilum × Hera, with some photographs (See *O.R.* xi., pp. 71-73), and some illustrations drawn from the animal kingdom. An interesting discussion followed.

HYBRID ORCHIDS.

A LECTURE on Hybrid Orchids, by Mr. Norman C. Cookson, was announced as the subject for the meeting of the Horticultural Club, held at the Hotel Windsor on March 20th. Sir John T. D. Llewelyn presided, and there were forty-five present, including a number of guests from the R.H.S. Orchid Committee and other Orchidists. After dinner, Mr. H. J. Chapman, Mr. Cookson's able gardener, exhibited an instructive series of about 150 lantern slides of hybrid Orchids and their parents, with a number of choice varieties. They consisted of photographs taken by Mr. Chapman, and then hand-coloured with aniline dyes, giving a most realistic effect, the most perfect, probably being a large specimen plant of Dendrobium Falconeri, crowded with flowers, in which the effect of light and shade, enhanced by its natural colours, was most realistic. Some of the Odontoglossums, Cypripediums, Phaius, forms of Lælia anceps, and others, were also remarkably good. In some cases flowers of the parents appeared on the same slide as the hybrid, the most notable being that of the remarkable Odontioda × Vuylstekeæ with its parents; in others they were separate, when the parents were first shown and then the resulting hybrid. The series included Phaius simulans, P. Sanderianus, with the resulting hybrid P. × Norman, these, with forms of P. × Chapmanii, being greatly admired. The appearance of Cypripedium Fairrieanum, which, in its natural colours, elicited a round of applause, was followed by C. Spicerianum, with their hybrid C. × Niobe, and the secondary hybrid C. × Norma. Then came C. callosum and C. × Juno, one of the best Fairrieanum hybrids yet raised. Some interesting Cattleyas and Lælio-cattleyas followed, with Dendrobiums, Odontoglossums × Wilckeanum, × Rolfeæ, fine forms of crispum, including O. c. Harold, with very broad segments, making the flowers "almost as round as a penny" which Mr. Chapman considered to be his best photograph, Masdevallias, Phalænopsis, Cymbidiums, Calanthes, and others. Views in Mr. Cookson's Orchid houses, and particularly a very fine group of Odontoglossums were also much admired.

In the discussion which followed, Mr. Cookson alluded to some of the

curiosities of hybridisation, and remarked that he had found it impossible to cross large and small flowers together, unless the larger was made the pollen parent. As examples, he mentioned certain Cattleyas and Lælias with Sophronitis grandiflora, and Odontoglossum with Cochlioda. He had come to the conclusion that the smaller grains of pollen from the smaller flowers were not capable of producing tubes sufficiently long to reach the ovule of the larger flower, and were therefore ineffective.

Mr. R. A. Rolfe, of Kew, remarked that there was something in the suggestion, for Mr. Charlesworth, of Bradford, had told him that when Cattleyas were fertilised with Sophronitis grandiflora the fertile seeds were always near the apex of the capsule, and when visiting the nursery he demonstrated the fact. Taking a mature capsule that had been so crossed, he divided it longitudinally, showing the contents at the base to be white, and those near the apex brown, the dividing line being well marked. At this point the capsule was cut transversely, and all the good seeds were found to be in the upper half. The pollen tubes had not reached the ovules in the basal half, in fact the different colour marked their limit. In the case of Brassavola Digbyana—and, by the way, its long beak, proved it to be a true Brassavola, not a Lælia—it was said that if this species were used as the seed parent the good seeds were usually found near the apex of the capsule, and thus the limiting influence of the long beak was apparent. But a notable exception to the theory occurred to him, for in the hybrids between Epidendrum radicans and larger-flowered species the Epidendrum was used as the pollen parent, and Mr. Seden had told him that it had been found impossible to get capsules on Epidendrum radicans unless the pollen of another Epidendrum was used; the pollen of the larger species invariably proved impotent. It recalled the case of Mirabilis jalapa which was readily crossed with the pollen of M. longiflora, but the reverse cross would not take, as Kölreuter had proved by making the cross, if the speaker remembered rightly, some hundreds of times. M. longiflora had the longer style, which might be the reason for the peculiarity. But other difficulties might regulate the limits of crossing. The pollen tubes might sometimes be too short, or they might be too large to penetrate the micropyle of the ovule. And they might develop too quickly or too slowly. An Orchid differed from most other flowers in the fact that the ovules were not developed at the moment of expansion, and could not then be fertilised. And without the stimulus afforded by pollination they did not develop. Mr. Veitch had shown that in the case of Cattleya Mossiæ, fertilisation did not take place till about three months after pollination, and all this time the pollen tubes and the ovules were steadily developing. If a pollen parent were used which developed in a much shorter period failure might result from this cause.

And the reverse of course might take place. The limits of variation were partly determined by systematic affinity, but within those limits certain physiological and perhaps mechanical difficulties could be traced. The subject was highly interesting for several reasons, and the botanist could not ignore hybrids if he wished, for they occurred in nature, and in some groups were quite common, for example Salix, Epilobium, and Odontoglossum, and a good many cases had been proved experimentally. Hybridisation was largely a question of opportunity. Wherever species that would cross grew together hybrids might occur, and as Orchids were so largely dependent upon insects or fertilisation, and insects did not confine their visits to one species of flower, the pollen was sure to get mixed, and hybrids would result. Hybridists carried the matter further by making crosses which could not occur in nature. It was not always possible to state with certainty whether a given plant was a hybrid or not without knowing its history, not even by tracing resemblances, though this method was generally sufficient when the history of an importation was known. In conclusion he pleaded that hybridists might do more to prove the origin of suspected hybrids by direct experment. The common Odontoglossum × Andersonianum had not yet been raised artificially, though there could be no doubt as to its origin.

Mr. Thwaites, Streatham, who contributed some interesting observations, remarked that he had succeeded in raising seedlings between Sophronitis grandiflora and Brassavola Digbyana, using the former as the pollen parent, but the seedlings had not yet flowered. He also advocated dividing the pollinia if larger than that of the species used as the seed parent, otherwise the pollinia were liable to choke the style passage, and thus result in failure.

Further remarks were made by Mr. Watson, of Kew, Mr. William Marshall, Mr. C. T. Druery, Mr. Bunyard, jun., Mr. H. Little, and Mr. H. J. Veitch, the latter describing the evening as one of the best and most instructive that he had spent at the club. The meeting concluded with a hearty vote of thanks to Mr. Cookson and Mr. Chapman, on the motion of Sir John T. D. Llewelyn.

ORCHIDS AT KEW.

As the season advances the number of Orchids in flower tends to increase, and a long list could again be compiled of those now flowering at Kew.

In the Warm house the Dendrobiums are still conspicuous, though considerably diminished in numbers, prominent among them being several good forms of D. crassinode, D. superbum var. giganteum, D. linuiflorum, D. primulinum, the well-known D. thyrsiflorum carrying six large racemes,

and several clumps of D. aggregatum suspended from the roof, on rafts, while close by is a small basket of the charming little D. Loddigesii. The hybrids include D. × Juno, D. × micans, and D. × Aspasia. In passing, one cannot help mentioning the gigantic D. undulatum, the flowers of which are still fresh, though they have been open quite five weeks.

Among other interesting plants in flower in this house are Phaius × Cooksoni, P. Wallichii, Spathoglottis × aureo-Vieillardii, Schomburgkia rosea, Cynorchis × kewensis, Ansellia congoensis and A. nilotica, Chysis bractescens, Cœlogyne Huetteriana, C. Parishii, and C. pandurata, carrying two large racemes of green and black flowers. Passing on, we come to the curious but handsome Cyrtopodium palmifrons, C. punctatum, and C. Andersoni, the two former having petaloid bracts, like their flowers, of a mixture of reddish brown and yellow. Suspended from the roof are two plants of Scuticaria Hadweni bearing several flowers each, also Stanhopea eburnea, whose flowers are very fragrant. A plant of Oncidium altissimum is carrying a good strong spike.

In the Botanical corner are several interesting plants, including Maxillaria platypetala, Epidendrum Ellisii, Cirrhopetalum picturatum, Galeandra lacustris, Brassavola nodosa, Mormolyce lineolata, the heliotrope-scented Bulbophyllum odoratissimum, B. fuscum, and the recently-introduced Polystacha Haroldiana.

In the Intermediate house Cattleyas Trianæ, Schroederæ, Mendelii, and Percivaliana are all in flower, also Lælia Jongheana, L. harpophylla, Brassolælia × Gratrixiæ, Cymbidium Ballianum, Maxillaria ochroleuca, M. Houtteana, M. præstans, Oncidium sarcodes, O. Marshallianum, and O. concolor, the latter suspended from the roof in pans, giving a bright appearance to the whole house. Several Epidendrums also add to the attractions of the house, as E. evectum, E. verrucosum, E. Wallisii, and the sweet-scented E. glumaceum. Trichopilias include T. sanguinolenta, T. laxa, and the handsome T. suavis. Suspended from the roof are Eria Kingii, Ornithocephalus granditlorus, and the handsome Dendrobium atro-violaceum. A second New Guinea species, D. Madonnæ, is still as perfect as last month.

A second warm house is devoted to Cypripedes and the Vanda group, each occupying one side of the house. Among the Paphiopedilums are several additions, as P. exul, P. Gratrixianum, P. nigritum, P. concolor var. Sanderæ, a well-flowered plant of P. Rothschildianum, and the rather shy P. hirsutissimum with five blooms, together with P. × Lathamianum and P. × Argo-Spicerianum. Phragmopedilums are well represented by P. × porphyreum, P. × Dominianum, P. × grande, P. longifolium, P. Roezlii, and P. Sargentianum. Among the Vandas are the North Indian V. cristata and V. teres, also Aërides Houlletianum, Mystacidium Germiny-

anum, Angræcum Sanderianum, the brilliant Renanthera Imschootiana, Saccolabium giganteum, and a pretty new species with rose-coloured flowers, S. rubescens, Rolfe.

The Cool House is gay with numerous species of Odontoglossum. O. longipipes bears a spike from three to four feet in length, with numerous small yellow flowers. O. Edwardii is carrying a spike quite five feet long, crowded with its beautiful violet-purple flowers. There are also several plants of O. crispum, gloriosum, Pescatorei and triumphans; O. mirandum, Uroskinneri, luteopurpureum, Hunnewellianum, Hallii, sceptrum, maculatum, Ehrstedii, Cervantesii, pulchellum, and the very rare little O. stellatum, with the hybrids O. × Andersonianum, × Coradinei, × Adrianæ, and × Harryano-triumphans. Among the Masdevallias are a well-flowered plant of M. × Pourbaixii, M. O'Brieniana, M. bella, and M. × Hincksiana, together with several others which were mentioned last month. Other plants are the pretty little Physosiphon Mooreii, Polystachya pubescens, and the violet blue D. Victoria-Reginæ, hailing from the Philippines. Cymbidium grandiflorum is bearing a good spike, and the flowers are opening perfectly in this cool situation, while near by is C. pumilum, a native of Japan, species of Stelis, and other rare botanical Orchids.

PAPHIOPEDILUM HIRSUTISSIMUM.

A curious fact has just come to light respecting this beautiful species, which carries its history back for about a couple of years, and, curiously enough, it has come out through the rediscovery of the allied P. Fairrieanum.

Messrs. Veitch summarise the history of the species as follows (*Man. Orch.*, iv., p. 29): "Cypripedium hirsutissimum and C. Fairrieanum, two of the most remarkable Indian Cypripedes, were introduced to British gardens about the year 1857, but nothing whatever was then known of their origin further than that they had been sent to England by a collector named Simons. The precise station . . . of C. hirsutissimum remained unknown till 1868-69, about which time the late Mr. John Day received a few plants from his nephew Captain Williamson, who had gathered them on the Assam side of the Khasia Hills, whence it has since been received by horticultural firms."

On looking up the records, in connection with the new fact above alluded to, I find that the species was named by Lindley, and originally figured and described in the *Botanical Magazine* t. 4990, in June, 1857. Its history is thus given:—"A native of Java, we believe, and communicated to us by Mr. Parker, of Hornsey, who purchased it at a sale of East Indian plants.

Lindley's Herbarium contains two flowers, one labelled "Parker & Williams," the other "Hort. Mr. Hanbury," there being no dates to show which was the earlier, though it is clear that the first-named was from the same source as the one figured.

Shortly afterwards it was also figured in the *Belgique Horticole* 1857, p. 353, t. 61, fig. 1-2, from a plant which flowered in the collection of Comte A. de Limminghe. It is said to have been shown for the first time at the Namur Exhibition of that year. Two years later a note appeared of a plant in the collection of M. Rougier Chauviere (*Rec. Hort.* 1859, pp. 181-183, fig. 40-41), but as both the figures are erroneous, representing C. villosum, the record remains doubtful.

In 1861 came a definite clue to the habitat, M. Louis Van Houtte remarking, when figuring it (*Fl. des Serres*, t. 1430), that it was a native of Bhotan, whence he had received it. Soon afterwards Warner stated (*Sel. Orch.* i. t. 15 :—"It was imported about four years ago from India along with C. Fairrieanum." Reichenbach also stated that English and Belgian importers had received it from Bhotan.

Mr. John Day next obtained it. On October 14th, 1868, he made a painting of a seed vessel (*Coll. Draw.* ii. t. 70), which is labelled:—"Seed vessel of a Cypripedium (which I have no doubt whatever is hirsutissimum) received from my nephew W. J. Williamson from Assam in July, 1868. It came in company with Vanda cœrulea and Dendrobium Falconeri, and I suppose from the Cossyah Khasia Hills, but it might have been from the Bhotan Hills, as two expeditions were made but the plants were not kept apart." A note was subsequently added: "N. B., May 14th, 1871. Flowered many plants of this importation, and they proved as expected—Cyp. hirsutissimum."

Two days before the date of the preceding note Mr. Day had painted an exceptionally richly-coloured form (*l.c.* xli. t. 83), and on March 28th, 1885, he added a very pale, much spotted form, "from a plant purchased at Protheroe & Morris's Sale rooms (*l.c.* xliv. t. 63). He there remarks:—"One of the finest species of the genus, now getting scarce again. He also comments on the "Java" record as "probably a mistake." We have also evidence what a keen observer Mr. Day was, for he adds: "When the flower first expands the remarkable undulations of the edges of the petals are not apparent, but they develop in two or three days. No doubt the edges keep growing longer than the central part, and therefore must undulate."

We may now mention the new fact. When the illustration of the re-discovered P. Fairrieanum appeared in this work (*O.R.* xiii. p. 201, fig. 62) it was shown by Mr. F. H. Moore, of Liverpool, to his friend Mr. James Fairrie, son of the late Mr. Adam Fairrie, after whom the species was

named, and Mr. Fairrie wrote to us expressing doubt as to the identity of the plant, as he had a painting, made by his sister, which represented quite a different plant. I was naturally puzzled, but now comes the solution. Mr. Fairrie lent the painting to Mr. Moore, who has taken a photograph, about half natural size, using an isochromatic plate and a yellow screen. Below the painting is written, *in pencil*, "Oct., 1855, natural size," and on the right of this, *in ink*, "Adam's Fairrieanum, from nature by Janet

Fig. 12. Paphiopedilum hirsutissimum.

Fairrie." This photo is here reproduced (fig. 12), and clearly represents C. hirsutissimum, and we may add that Mr. Reginald Young and his gardener, Mr. Poyntz, as well as Mr. Moore, all of whom have seen the original painting, agree that it is quite typical in colour. Unfortunately nothing further can be traced about its history, but Mr. Fairrie says that it is the plant of which his father was so proud, and his sister says that she

recollects flowers similar to the re-introduced C. Fairrieanum, but agrees that no particular value was attached to them by her father. It is rather curious that this earlier appearance of C. hirsutissimum should not have been recorded, as it carries the history of the species back to the autumn of 1855, but how long the plant had then been in the collection cannot be stated. Mr. Fairrie came to Liverpool in 1847, and commenced then to buy Orchids, and the collection was sold in 1865, when he left Mosley Hill, being purchased by Messrs. Rollisson for £3,000.

R. A. ROLFE.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on March 6th, when there was a magnificent display of Orchids, and the awards issued consisted of one Gold and ten other Medals, three First-class Certificates, seven Awards of Merit, three Cultural Commendations, and one Botanical Certificate.

W. A. Bilney, Esq., Fir Grange, Weybridge (gr. Mr. Whitlock), staged a magnificent group, occupying one side of one of the central stages in the Hall, to which a Gold Medal was awarded. It consisted chiefly of Dendrobiums, and contained many fine forms of D. × Ainsworthii and D. nobile, the latter including the pure white D. n. album and numerous examples of D. n. nobilius. Among the more noteworthy forms were D. × Ainsworthii Hazelbourne var., D. × A. splendidissimum, D. × Cybele, D. × C. nobilius, D. × pallens, D. × xanthocentrum, D. × Wigamæ, D. × Wiganianum and its varieties, D. Wardianum and its hybrids, D. albosanguineum, D. Brymerianum, D. × Melpomene, D. thyrsiflorum, and numerous others. The group also contained some good Cymbidium eburneum, Odontoglossums, Oncidiums, and other plants.

The Hon. Walter Rothschild, Tring Park, Tring (gr. Mr. Dye), sent a group of the stately Lissochilus Horsfallii, Batem. (*Bot. Mag.* t. 5486), a native of West Africa. It has been grown as a river-bank plant, in tubs of water, with Nymphæas, and when growing strongly frequent waterings with liquid manure were given. The species bears large plicate leaves and tall, erect scapes of very numerous flowers. These have recurved green sepals tinged and lined with dark purple, orbicular white petals suffused with rose, and a three-lobed lip, with the front deep rose-purple, and the side lobes green lined with dull purple. A group of four plants was shown, one of them bearing three spikes, the best nearly five feet high. The species was awarded a First-class Certificate, and a Silver-gilt Flora Medal was given to the group.

Baron Sir H. Schröder, The Dell, Egham gr. Mr. Ballantine, staged a splendid group of Calanthes, all of them having the bulbs of huge size and magnificent condition. They consisted of C. Regnieri, with examples of the tall and handsome C. × Baron Schroder in the centre. A Silver Flora Medal was awarded. A Botanical Certificate was given to the pretty little South African Cynorchis compacta, bearing numerous spikes of white flowers.

S. Briggs-Bury, Esq., Bank House, Accrington gr. Mr. Wilkinson, staged a nice group, to which a Silver Banksian Medal was awarded. It included Cypripedium villosum magnificum, C. × Beekmann, some good C. × Maudiæ, two good forms of Odontoglossum × loochristense, the handsome O. crispum Empress of India, and others.

C. J. Lucas, Esq., Warnham Court, Horsham gr. Mr. Duncan, showed a group containing a splendid form of Lælio-cattleya × warnhamensis, Cypripedium × Calypso with six flowers, Angræcum sesquipedale, Cypripedium × warnhamense, Phaius maculatus, Cymbidium × Lowio-eburneum and other plants. A Bronze Banksian Medal was awarded.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White) exhibited a few fine Dendrobiums, including D. × Apollo album, D. × Wigania album, and some fine examples of D. × Sibyl, a Cultural Commendation being given to one noble specimen of the latter. A second Cultural Commendation was given to a fine example of the blush-white D. superbum Burkei, and an Award of Merit to D. × Wigania illustre, having cream-white flowers tinged with rose, and the disc of the lip orange with a dark maroon blotch.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), exhibited Dendrobium × Ainsworthii, D. × Venus, D. × Othello, D. × Wiganiæ, D. × Wiganianum, D. nobile album, D. n. nobilius, and the fine white D. × Colmaniæ. An Award of Merit was given to D. × Wiganianum Gatton Park var., a large flower of fine form and texture, cream in colour, tinged with rose, and the disc of the lip purplish. A Cultural Commendation was given to a well-bloomed example of Masdevallia × Pourbaixii.

Sir W. H. S. Marriott, Blandford (gr. Mr. Denny), showed Sophro-cattleya × warnhamensis var. "Cerise," bearing a spike of four handsome scarlet flowers. A First-class Certificate was awarded.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), showed a plant of Brassocattleya × Digbyano-Mendelii, the flowers having a slight greenish tint. An Award of Merit was given.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), gained an Award of Merit for the pretty little albino Odontoglossum Rossii immaculatum, which is figured at page 113 of our third volume.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holford), showed

Dendrobium × Haywoodiæ Harefield Hall var., and Cypripedium × Georges Hackenschmidt tenebrosum × insigne Harefield Hall var..

N. C. Cookson, Esq., Oakwood, Wylam (gr. Mr. H. J. Chapman), sent the handsome Phaius × Clive.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), showed a good Dendrobium × Schneiderianum, and D. × Ainsworthii Thompsoni.

H. S. Goodson, Esq., Putney (gr. Mr. Day), showed Cypripedium × H. S. Goodson (Spicerianum magnificum × Lathamianum).

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), exhibited Odontoglossum Wilckeanum Pitt's var., having the large flower light yellow in colour, heavily blotched with brown.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), showed the handsome Dendrobium × Thwaitesiæ.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cypripedium × Mrs. W. E. Dickson, C. × Miss Marian Sillem, a pure white flower, densely spotted with purple; the handsome Lælio-cattleya × Mrs. R. A. H. Mitchell (callistoglossa × Martinetii), and L.-c. × Marnhami (callistoglossa × Aphrodite), a pretty flower, with pale rosy lilac sepals and petals, and the broad lip marked with purplish crimson.

Sir F. Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), showed Chysis × Chelsoni, a handsome flower, having the outer halves of the segments orange-red.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a very fine group, which was awarded a Silver-gilt Flora Medal. It consisted chiefly of Odontoglossums, and contained some fine O. × Harryano-triumphans, O. × Rolfeæ, O. × loochristiense, O. × amabile Charlesworthii, and the pretty O. × Gladys (cirrhosum × Harryano-crispum); together with some good examples of Cattleya Trianæ, C. × Enid, several handsome Lælio-cattleya × Myra, L.-c. × Lucasiana Jeanette, Brassocattleya × Queen Alexandra, *Zygopetalum crinitum cœruleum*, and others. An Award of Merit was given to Odontioda × heatonensis, described at page 118 of our present issue.

Messrs. Sander & Sons, St. Albans, showed a good group, containing a splendid example of Ansellia africana, with three fine branched spikes, forms of Cattleya Trianæ, Læliocattleya × Berthe Fournier, Brassocattleya × Empress of Russia, Cymbidium × eburneo-Lowianum, Phaius × Marthæ, Coelogyne cristata, forms of Cypripedium insigne, and other plants. A Silver Banksian Medal was awarded to the group. A First-class Certificate was given to Odontoglossum × Fowlerianum (Rossii rubescens × cirrhosum), a handsome hybrid, having the sepals and petals narrow, thickly spotted with deep purple, and the margins and tips

bright rose-purple, while the lip was bright rose-purple, with the base and the callus yellow.

Messrs. James Cypher & Sons, Cheltenham, gained a silver Flora Medal for a rich and varied group, containing many fine Dendrobiums, D. Wardianum hololeucum and other albinos being prominent, together with Lælia anceps Schroederiana, good examples of Cattleya Trianæ, Phalænopsis amabilis Rimestadtiana, Epiphronitis × Veitchii, a fine dark Lælio-cattleya × Dominiana, and many hybrid Cypripediums and Odontoglossums. An Award of Merit was given to Dendrobium nobile Perfection (D. n. elegans × D. n. nobilius), a very round and broad flower, magenta-rose in colour, and with a very dark maroon blotch on the broad lip.

Messrs. H. Low & Co., Enfield, obtained a Bronze Banksian Medal for a good group, containing Phalænopsis Schilleriana, Lycaste Skinneri alba magnifica, Saccolabium Harrisonianum, Pleurothallis Roezlii, Dendrobium crassinode, D. Boxallii, Oncidium sarcodes, Epidendrum × Endresio-Wallisii, and Cypripedium × Helen II. with four flowers.

Messrs. Stanley and Co., Southgate, received a Silver Banksian Medal for a group of magnificent examples of Oncidium concolor, each plant having three or four sprays of handsome yellow flowers.

M. Ch. Vuylsteke, Loochristi, Ghent, showed a small group of rare hybrid Odontoglossums, all of excellent quality, including O. × Wilckeanum, O. × Wiganianum, O. × Rolfeæ, O. × bellatulum, O. × Vuylstekei, and others, a Silver Banksian Medal being awarded.

Messrs. Sutton and Sons, Reading, showed Pleione yunnanensis, described and figured at page 81 of our last number. This now received an Award of Merit.

Messrs. Heath and Sons, Cheltenham, showed two good examples of Dendrobium Cassiope × Dominianum, several D. barbatulum, D. nobile Heathii, Cœlogyne cristata, and some Odontoglossums.

M. G. Vincke-Dujardin, Bruges, sent Cattleya Trianæ cœrulea, with the front of the lip slate-blue.

At the meeting held on March 20th the display of Orchids was smaller than at the preceding meeting, but some good things were staged, and the awards consisted of five medals, one First-class Certificate, three Awards of Merit, and two Cultural Commendations.

Baron Sir Henry Schröder, The Dell, Egham (gr. Mr. Ballantine), staged a very fine group, to which a Silver-gilt Flora Medal was awarded. It contained a fine series of Dendrobiums, among the more noteworthy being the charming white D. superbum Burkei, D. Brymerianum, D. fimbriatum, D. Findlayanum, D. aureum philippinense, and some fine forms of D. nobile, Wardianum and × Ainsworthii, the handsome

Eulophiella Elizabethæ, some good cut spikes of Calanthe × Baron Schröder, Lælias harpophylla, Jongheana and × vitellina, Masdevallias ignea, tovarensis, × Imogen and × Courtauldiana, the charming Odontoglossum Pescatorei vars. Veitchianum and Schroederianum, O. Hunnewellianum, O. Uroskinneri, and the rare O. × Leeanum in magnificent condition, the panicle bearing four side branches and very numerous flowers, Sophronitis grandiflora, Cattleya Trianæ Osmani, Cypripedium Lawrenceanum Hyeanum with three beautiful flowers, C. glaucophyllum, hirsutissimum, Mastersianum, × Olivia, and other good things.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), sent a good plant of Cattleya × Cecilia (Trianæ × Lawrenceana), Odontoglossum × Adrianæ Lady Crawford, and O. crispum Iolanthe, the latter bearing a spike of seventeen magnificent white flowers, of great size and substance, and gaining a Cultural Commendation.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), also received a Cultural Commendation for a magnificent panicle of Phalænopsis amabilis (Blume), bearing four side branches and about eighty flowers and buds. He **also sent a good Dendrobium × Melpomene.**

F. Menteth Ogilvie, Esq., Oxford (gr. Mr. Balmforth), sent a fine plant of the striking Eriopsis rutidobulbon, Dendrobium × Thwaitesii Veitch's var., and the handsome Cypripedium × aureum Hyeanum, the latter **gaining an Award of Merit.**

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cattleya × Mrs. Frederick Knollys (Mossiæ × Hardyana), a fine thing with rosy lilac sepals and petals, and a rich purple-crimson lip with two deep yellow blotches in the throat, the fine C. niveum Wellesleyanum, C. × villoso-bellatulum, with four good flowers, and C. villosum The Premier, a very fine form, bearing a broad chocolate band on the dorsal **sepal, the latter receiving an Award of Merit.**

F. A. Bevan, Esq., Trent Park, New Barnet (gr. Mr. Parr), sent **Odontoglossum × elegans Trent Park var.**

G. F. Bird, Esq., West Wickham (gr. Mr. Redden), sent a fine form of Odontoglossum triumphans.

J. Bradshaw, Esq., Southgate (gr. Mr. Whitelegge), sent the beautiful Lycaste Skinneri armeniaca, L. S. alba, and three other good forms.

S. Briggs-Bury, Esq., Accrington (gr. Mr. Wilkinson), sent Cypripedium × Victor Cavendish, a large greenish, well-spotted flower, with a white **apex to the dorsal sepal.**

E. F. Clark, Esq., Teignmouth (gr. Mr. Riddiford), sent three hybrid **Cypripedes.**

Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), sent the rich orange-yellow Spathoglottis aurea Gatton Park var.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Chapman), sent the handsome Odontoglossum crispum Princess Maud, O. × excellens Prince of Orange, O. × ardentissimum Cookson's var., and Dendrobium × Ainsworthii Oakwood var., a very large, deep rose-purple form.

John S. Moss, Esq., Bishops Waltham (gr. Mr. Kench), showed the pretty hybrid Odontoglossum × amœnum (Pescatorei × sceptrum).

Captain R. P. Purefoy, R.N., Shalstone Manor, Buckingham (gr. Mr. Cordery), sent a good Dendrobium pulchellum (Dalhousieanum).

O. O. Wrigley, Esq., Bridge Hall, Bury (gr. Mr. Rogers), sent the rare and pretty Miltonia Warscewiczii xanthina, and a well-marked form of Odontoglossum × Adrianæ.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a splendid group, consisting chiefly of hybrids, to which a Silver-gilt Medal was awarded. It contained many beautiful Odontoglossums, as O. × excellens, O. × Elaine (cirrhosum × Harryanum), which is described on p. 118, some good O. crispum, × Rolfeæ, × loochristiense, × crispo-Harryanum, × Hallio-crispum, the handsome white Brassocattleya × Queen Alexandra, Sophrolælia × Psyche, Dendrobium atro-violaceum, a very fine Cochlioda vulcanica, the beautiful white Cattleya Mendelii Duchess of York, Zygopetalum × Perrenoudi, a pretty hybrid between Lælia cinnabarina and Epidendrum atropurpureum, a very richly-coloured Lælio-cattleya × Dominiana, L.-c. × Wellsiana and other fine things. An Award of Merit was given to L.-c. × Sunray superba (L. cinnabarina × C. superba), a very richly-coloured form.

Messrs. James Cypher and Son, Cheltenham, received a Silver Flora Medal for a fine group, including a handsome Cattleya × calummata with four flowers, Epiphronitis × Veitchii, Odontoglossum nævium, O. × Adrianæ punctatum, Oncidium concolor, Dendrobium nobile album, D. n. Perfection, raised from a remarkably round form fertilised with D. n. nobilius, and having the shape of the first and the colour of the second (the parents being also shown), D. × Apollo album, and other Dendrobes, Cypripedes, &c.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for a pretty group, containing Cattleya Trianæ coerulea, with a good white form, C. Schilleriana, Angræcum citratum, Catasetum macrocarpum, Diacrium bicornutum, Odontoglossum Harryanum, Cypripedium × microchilum, C. × Winnianum, C. × Winifred Hollington, C. × aureum Hyeanum, the graceful little Spiranthes australis, introduced from Java, with Vanda tricolor, and bearing a spiral spike of white flowers, Dendrobium Wardianum ochroleucum, and others.

Messrs. Sander & Sons, St. Albans, also received a Silver Banksian Medal for an interesting group, containing the fine Cymbidium grandi-

florum, Renanthera Imschootiana, Schomburgkia undulata, the handsome Zygopetalum × Gottianum, Cœlia Baueriana, Notylia multiflora, Dendrobium nobile virginale, Cypripedium villosum annamense, remarkable for having a dark band on the dorsal sepal, and others.

M. A. A. Peeters, Brussels, send Cypripedium × aureum Pomone, and Odontoglossum × Lambeauianum roseum (× Rolfeæ × crispum Madame Falcke), a very handsome, heavily-blotched flower with rosy ground, which received a First-class Certificate.

M. Draps-Dom, Laeken, Brussels, sent a good Odontoglossum × Adrianæ, two spotted O. crispum, and a few good Cypripedes.

Messrs. Linden & Co., Moortebeek, Brussels, sent Odontoglossum crispum Lucien Linden, a prettily-spotted form, said to have been raised from O. crispum × O. c. Eldorado, the fine Cochlioda vulcanica Linden's var., Oncidium Phalænopsis, Cypripedium præstans, and C. p. aureum, a pretty yellow form.

DIPLOMA AWARDS.

The special competition for Lycastes brought several exhibitors, but only a second Diploma was awarded to L. Skinneri Beauty, from J. Bradshaw, Esq., a fine blush white flower, with rosy crimson markings on the lip.

A nice little group of the Society's paintings of Lycaste were also shown.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on March 8th, when the exhibits were not numerous, and the awards consisted of one Medal, two First-class Certificates, and two Awards of Merit.

O. O. Wrigley, Esq., Bury, (gr. Mr. Rogers), received a First-class Certificate for Miltonia Weltoni album.

Messrs. James Cypher & Son, Cheltenham, received a Silver Medal for a good group of plants, and an Award of Merit for Dendrobium nobile Perfection.

Messrs. Sander & Sons, St. Albans, received a First-class Certificate for Odontoglossum × Fowlerianum (Rossii rubescens × cirrhosum), a very beautiful novelty.

Messrs. A. J. Keeling & Sons, Bradford, received an Award of Merit for Dendrobium × Wigania xanthochilum, and a Vote of Thanks for a small group.

M. Ch. Vuylsteke, Loochristi, Ghent, received a Vote of Thanks for a small group of hybrid Odontoglossums, in which O. × Lawreneeanum was particularly effective.

Messrs. John Cowan & Co., Gateacre, and Mr. D. McLeod, Choriton-cum-Hardy, also received Votes of Thanks for interesting groups.

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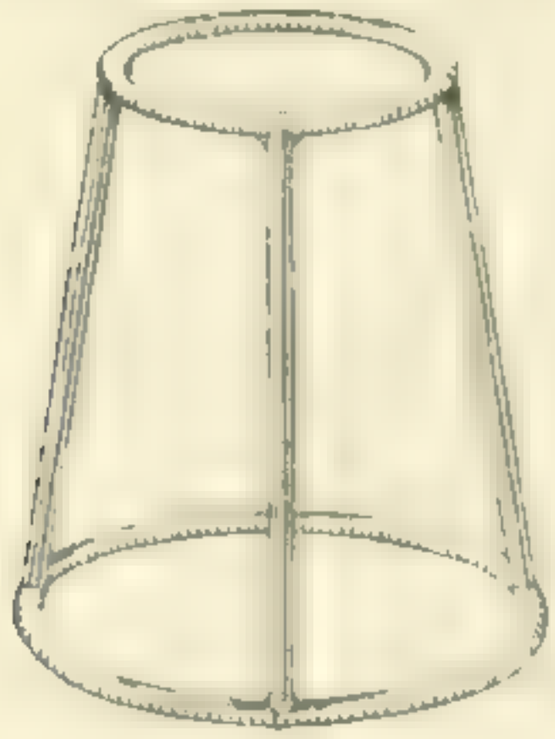

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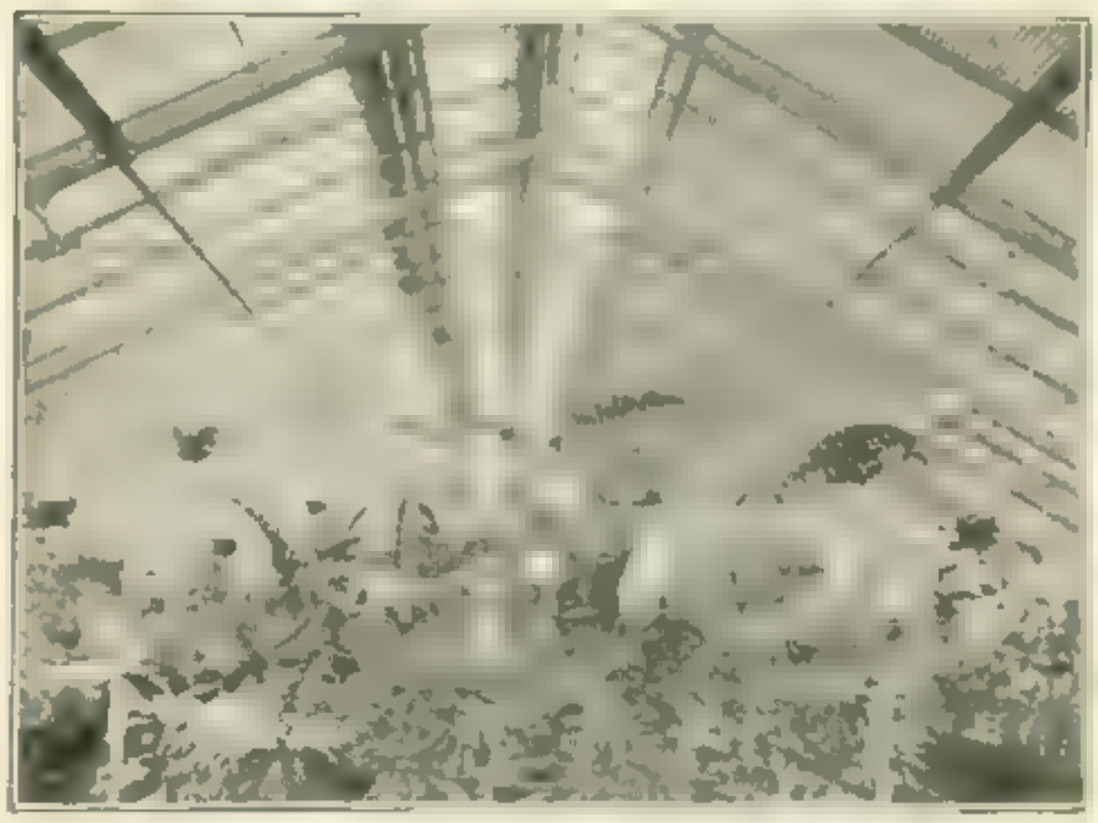

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PAPHIOPEDILUM × PRINCESS.

The annexed figure represents another pretty and delicately-coloured Fairrieanum hybrid, namely P. × Princess, whose history was given at page 43 of our last volume. It is reproduced from a painting, by Macfarlane, of a flower from the collection of Francis Wellesley, Esq., Westfield, Woking. The plant bloomed in August last, and was exhibited at a meeting of the R.H.S. (*O.R.* xiii. p. 277). It was raised by M. Opoix,

Fig. 13. Paphiopedilum × Princess.

from P. × Mons. Coffinet crossed with the pollen of P. Fairrieanum, and thus is of rather complex ancestry, an analysis showing half Fairrieanum, a quarter Dayanum, and one eighth each barbatum and superbiens. Perhaps the most striking resemblances in the flower are the ciliæ of the petals, recalling P. Dayanum, and the curved petals and somewhat reticulated veining of the dorsal sepal, recalling Fairrieanum. The rich colour of P. barbatum is wanting, and there is only a trace of the spotted

petals of P. superbiens, though there are resemblances to both in shape. In fact it is a blend of the four species, and its delicate colours reflect the general tint of three of its ancestral parent species.

CALENDAR OF OPERATIONS FOR APRIL.

By J. M. BLACK, Streatham.

APRIL introduces in all earnestness the Orchid growers' busy season, and potting operations will now have to be pushed on expeditiously, so as not to lose the proper season, and the present will be a suitable time to discuss the important question of compost. I am becoming less and less satisfied with large quantities of leaves in the compost for Cattleyas and Lælias, and a compost which will suit these will also be found to suit most other epiphital pseudobulbous Orchids, particularly those which require at times but little water at the root, and which include most Oncidiums, Brassavolas, Stanhopeas, Catasetums, Dendrobiums, Epidendrums, Trichopilias, Sophronitis, &c. The using of peat rhizomes instead of crocks was an excellent innovation, and this alone will, I think, contribute largely to conserving the energy of imported plants.

We have lately been re-potting a number of half-grown Cattleya seedlings, for which rhizomes were used as drainage when the plants were potted about two years ago, and I was gratified to find the roots in splendid condition, and the rhizomes nearly as open and springy as when first used. Concurrently with the introduction to practice of leaves (or leaf-soil), it might be safe to say that there was an increase in the use of sphagnum moss, and soft potting became the order of the day. A compost containing a large proportion of decaying leaves and sphagnum may be organically rich, but it is one which physically soon collapses, and when we remember that most Orchids of the classes enumerated above flower best the second and third years after being disturbed, the reason for using a compost which will remain sweet, firm, and porous for a number of years is readily apparent.

A reliable compost for these plants is one composed of two-thirds peat of good quality, broken into lumps and with only the dust which falls in picking removed, one-third sphagnum, and a tenth of the bulk of oak leaves, with a good sprinkling of coarse silver sand added. These should be thoroughly mixed together, well moistened, and prepared a week or so before using. And I am not quite sure that there is anything to be gained by having any moss at all in the body of the compost; as an addition to the surfacing it may be of considerable value, looking neat and fresh, and assisting in the irrigation of the plant. But has it any nutritive value worth speaking of, and is not its decaying readily in the compost more a source of weakness than strength? When a plant is freshly potted, the

roots run freely in the new sphagnum, but old and dead sphagnum has no attraction for them, and at its best I believe it is more a mechanical and neutral agency than anything else.

It might be urged that plants like Phalænopsis grow well in it, which disproves its being neutral, but rain-water will supply most of the constituents which the plant requires at the root when, and especially near towns, containing some mineral elements and then, of course, we know the functions of the leaves, and the large part they play in the absorption of food from the atmosphere. Every plant requires mineral substance, and the small quantities which the Phalænopsis will require the sphagnum must be called upon to supply. I do not know if it has ever been tried, but the addition of a sprinkling of wood ashes to a wholly sphagnum moss compost for succulent growers like Phalænopsis, might be of very great advantage. For plants that one expects to be but a short time in the pot the question is not so urgent, but what we are concerned with is to use a compost that will meet the requirements of a plant for two or three years without falling to pieces or losing its virtue, and sphagnum moss does not lend itself to this end. As a rooting medium, kept open by being mixed with crocks or sand, sphagnum may claim to be some good, but the hungriness of such a mixture would compel us to fall back on the use of guano or some other manure, which, of course, is not our intention. A compost may be all that can be desired chemically, but plants require something more than this.

Hard-growing, epiphital Orchids seem to want a firm yet porous rooting medium, so that the roots may get plenty of air, if they are to produce good flowers, with flower stems able to support them. Belgian leaf-soil is quite a different thing to our oak leaves. It is well decomposed, and is mixed with a fine soft sand, and if used alone for potting there is but little subsidence afterwards; but I do not recommend it, and most, if not all, English growers who have given it a fair trial, have gone back to a compost more akin to the old one, and they are still back-sliding.

In scanning through the last few volumes of the *Orchid Review* I have discovered some interesting reading touching on the subject. Among other things, I dropped across a foreign commission who were looking into the matter, and find them examining a Cattleya Mossiæ, potted in Belgian leaf soil, which had been undisturbed for five years, and the roots and soil were still in good condition. That is some years ago now, and I am wondering if that plant has been disturbed yet! A Cattleya rhizome travels a good long way in five years—even in an ordinary peat and moss mixture—and it would be instructive to know the relative sizes of the plant and pot when they first made each other's acquaintance. At any rate, nothing approaching that achievement has been recorded in this country.

CATTLEYAS.—The time to repot a Cattleya is when new roots appear. Remove back bulbs, leaving only three or four behind the lead, and carefully trim away all dead roots, and see that the plant is free from scale, &c., before putting into a fresh pot. The pot should be large enough to allow for another two or three bulbs, but no larger. Fill the pot one-third full of rhizomes which have been cut up and well soaked, and pot firmly, keeping the plant on a level with the rim of the pot. The potting mixture should be used fairly moist. C. labiata, C. Gaskelliana, C. Percivaliana, C. Triana, C. bicolor, C. amethystoglossa, C. velutina, C. Leopoldi, and C. granulosa will all require attention about this time. Do not pot a plant if it does not require it, although a little touch-up on the surface may be necessary.

Lælia Jongheana, L. pumila and Sophronitis grandiflora may also be repotted at this season; also Trichopilia fragrans and T. suavis, when new growth commences. Many Cœlogynes, Oncidiums, Epidendrums, and a host of other plants will require fresh material as they start into new growth. Anguloas should have loam added to the compost, and should be repotted on flowering.

Most of the so-called deciduous Dendrobiums will now have passed out of flower, and may also be repotted. Give Dendrobiums very little air until well into the season, and spray them overhead frequently when fine.

TEMPERATURES.—The night temperature should now read something like the following:—

EACH INDIAN HOUSE.—63° to 68°.

CATTLEYA HOUSE.—58° to 63°.

INTERMEDIATE HOUSE.—53° to 58°.

COOL HOUSE.—51° to 53°.

SHADING, &c.—I would refer readers to my last calendar for remarks on shading, ventilating, and damping.

A little more warmth may be allowed if the nights are mild, and on cold nights the minimum figure will be most suitable, but lower than that should be avoided as much as possible. The temperatures should be allowed to rise five degrees during the day time when dull weather, and with sun fifteen or twenty more may be registered in the warm houses.

THE GERMINATION OF ORCHID SEED.—In continuation of my remarks on Lælio-cattleyas in last month's Calendar, where I got as far as securing thoroughly ripe seed, the next question is how to germinate it. I was present at Professor Henslow's lecture on Parasites and Saprophytes on March 20th, and was somewhat discomposed to find that Orchids belong to the latter class. Saprophytes are plants which live on decaying matter, which seems quite a respectable thing for a plant to do, but Professor Henslow tells us that they are usually deficient or debased in some way.

particularly in the embryo. He described what happened during the germination of Orchid seed. It seems that a kind of fungus must be present, and this fungus is antagonistic to the advancement of germination, eating up the starch and what not that is formed within the embryo-sac, and the case seems almost hopeless for the seed, when suddenly it asserts itself, falls upon the fungus and devours it. When this fungus is absent germination will not take place, and Professor Henslow gave this as the reason why the seed must be sown on the surface of a pot in which an Orchid is growing, as the fungus would be present among the roots. That there is a phenomenon of this kind about most of us who have sown a lot of seed will gladly admit, but the unfortunate affair is that the seed does not always germinate when sown on the surface of another plant. In the *Journal of the Board of Agriculture* a good deal has been said during the last two years on the inoculation of leguminous plants, and although it is evident from the results of recent experiments throughout the country, that the subject of plant inoculation is still in the experimental stage some positive results have been obtained from the use of "cultures." Could not some one of our Orchid-growing scientists take this matter of the fungus up and solve it for us in a practical way? Could not this fungus be cultivated and handed round so that we could "inoculate" a seed pan as occasion required. I do not wish to be pulled up for writing nonsense, but it appears to me to be as feasible to cultivate this fungus as it is for the bacteriologists to make their cultures from the nodules of the leguminous plants.

However, with some insistence, we are now raising a good many Orchids, fungus or no fungus, and though we may to a large extent be working in the dark, the results encourage us to persevere, and the obstacles and disappointments that one meets only help to accentuate the triumphs.

Lælio-Cattleyas have been, and are being, raised in large numbers, and a good many different methods are employed. The necessity of sowing them on potted plants has been disproved, but that method may be still a very good and reliable one, and with the exception of Lælio-Cattleyas I do not know that it has been superceded. For instance, one never hears of Cypripediums or Odontoglossums being raised on anything but on the surface of growing plants. There may be something in having an "eye" for a likely surface, and the rest must be done with care and devotion as to watering, spraying, general healthy surroundings, and the many things which go to make up good growing.

Method of Sowing the Seed.—Having selected the pots on which it is intended to sow, clip over the surface evenly, and then give a good watering. Choose pots that are not too large and in which the plants are well established and healthy. It is hardly necessary to say that Odontoglossum seed should be sown on pots containing Odontoglossum plants,

Cypripediums on Cypripedium plants, &c. If one has more than one lot of seed to sow the greatest care should be taken that the seed does not get mixed during the performance. It is best to have those pots only on which one kind of seed is to be sown beside one at a time. A pocket knife is a very suitable instrument to distribute the seed evenly and thinly over the surface with. Take a little of the seed upon the tip of the blade, hold it over the surface of the pot, and then tap gently with the flat of the blade on the rim of the pot. One can hold the pot in the left hand, so that any desired angle can be had. After some practice, one can also distribute the seed very nicely by gently puffing it off the tip of the blade. I have been at some pains to describe this very simple operation, as clumsiness is alien to success in this delicate branch of Orchid growing—raising them from seed.

The seed pots should then be placed well up to the light, shaded from all direct sunshine, and kept in the warmest parts of their respective houses. There need be no haste in pricking the seedlings off, providing they are not overcrowding each other, but they can be safely pricked off when th leaf point is a little way up: if they have room, however, leave them on the seed pots until they have started to send out a root.

THE HYBRIDIST.

ODONTIODA HEATONENSIS.—A second Odontioda has now appeared, having been raised by Messrs. Charlesworth and Co., Heaton, Bradford, from Cochlioda sanguinea and Odontoglossum cirrhosum. It was exhibited at a meeting of the R.H.S. on March 6th last, and received an Award of Merit. It is a charming little thing, fairly intermediate in size, but most like the Odontoglossum parent in shape. The sepals and petals are broad at the base, and much acuminate at the apex, with a whitish ground colour, and numerous rosy-purple spots. The lip is free, with a narrow claw, nearly parallel to the column, and a reflexed limb, which is very broad at the base, with a narrowly acuminate recurved apex, and whitish with some rosy-purple markings in front of the crest. It is remarkably different from the one raised by M. Ch. Vuylsteke, as might be expected from the parentage.

ODONTOGLOSSUM × ELAINE.—At the following R.H.S. meeting, held on March 20th, Messrs. Charlesworth exhibited another interesting hybrid from Odontoglossum cirrhosum, the pollen parent being O. Harryanum. It is a remarkable thing, much like a greatly enlarged edition of O. cirrhosum, with broader very acuminate cream-yellow sepals and petals, heavily blotched with dark brown, the spots on the lip and base of the petals being smaller, and mostly elongated into streaks. The lip is

punduratæ, with the upper half cream yellow and unspotted, and the apex acuminate. It is a remarkable instance, and as the plant was small and bore only a couple of flowers, it is to be developed into a fine thing.

Lælia × De Crespigniana.—The Marquis de Wavrin, of Ghent, writes to point out that Lælia × Mary Coleman, exhibited at the R.H.S. meeting held on February 13th, and noted at p. 80 of our last issue, has the same parentage as the earlier L. × De Crespigniana (*O. R.* xiii. p. 309), and should therefore be regarded as a form of it. This is quite correct, and we regret having overlooked the fact when writing the note. The Marquis remarks that the cross was raised by him, and was exhibited at a Horticultural meeting at Ghent, in July, 1904, under the name of Lælia × De Geestiana after his *chef de culture*; that a plant was exhibited by Messrs. Sander & Sons, at the International Horticultural meeting at Bruges last year, and that it was figured in the last issue of the *Dictionnaire Iconographique des Orchidées*.

LÆLIO-CATTLEYA × GOTTOIANA VAR. GILBERTII.

On November 18th, 1902, a plant from the collection of Francis Wellesley, Esq., Westfield, Woking, was exhibited at a meeting of the R.H.S. under the name of Lælia Gilbertii, and was noted as a supposed natural hybrid from L. tenebrosa, having a flower light rose in colour, with a purple-rose front to the lip, and it was suggested that it might be a form of Lælio-cattleya × Gottoiana (*O. R.* x. p. 307). It has now bloomed again, and Mr. Wellesley has forwarded one of the flowers. It can only be compared with Lælio-cattleya × Gottoiana, and as Cattleya Warneri is the only species growing with L. tenebrosa that could produce such a hybrid there can be little doubt that it is a form of that natural hybrid. It differs chiefly from the typical form in having a pair of large white blotches deep in the throat, the two being separated by about five narrow purple lines running down the disc. In the typical form the throat is light purple, not white, but, as is usual with hybrids, there is a certain amount of variation, and it may be added that the form raised artificially by Mr. Douglas is considerably lighter in colour than the wild original. It is a handsome thing.

R. A. Rolfe.

ODONTOGLOSSUMS IN LEAF-COMPOST.

I find that the flowers of Odontoglossums grown in oak leaves and sphagnum wither, when cut, much more quickly than do the flowers of Odontoglossums grown in fibrous peats and sphagnum. Might I ask if any of your numerous readers have an experience similar to mine.

Worthing. C. B. Lucie-Smith.

ODONTOGLOSSUM × STEWARTIANUM.

A FLOWER and photograph of a very beautiful hybrid Odontoglossum has been sent to us from the collection of Robert Stewart, Esq., of Glasgow, and the latter is reproduced in the annexed figure. Mr. Stewart writes :—"The seed-bearing plant, Odontoglossum × Andersonianum magnificum, was fertilised in June, 1900, with pollen of O. crispum heliotropium. The seed was sown on July 26th, 1901, but germination did not take place very readily, with the result that only three or four plants were ultimately saved. There were seven buds on the spike of the seedling, but only four were

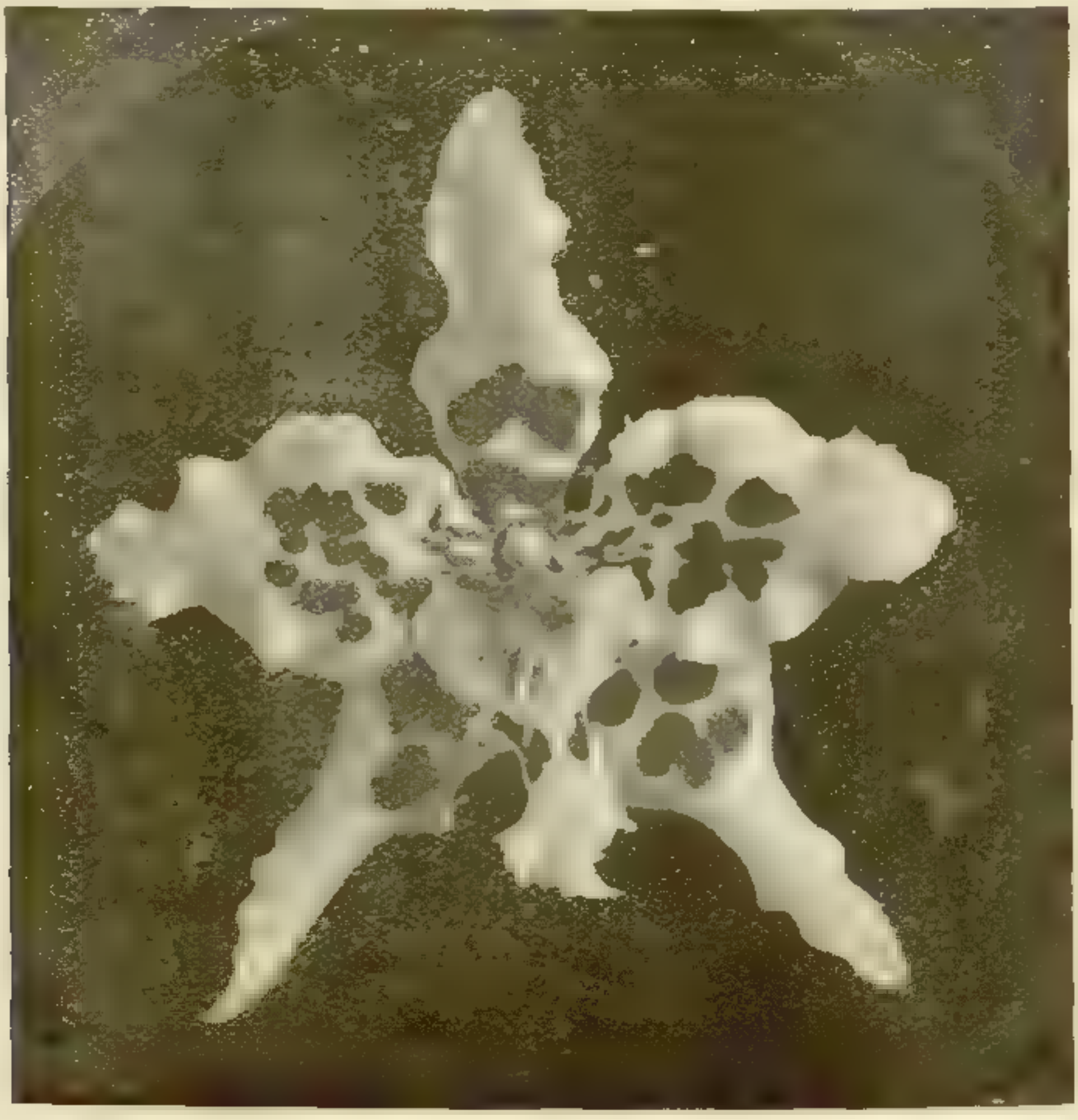

Fig. 14. ODONTOGLOSSUM × STEWARTIANUM.

allowed to develop. It flowered March 1st, 1906." It will be seen that the hybrid has retained a good deal of the characteristic Andersonianum shape, but the segments are broader than in most forms of that hybrid. The ground colour is cream white, prettily suffused with rosy purple, and the blotches, which are rather large and regularly disposed on the lower half of the sepals and petals, are warm red brown, while a couple of others appear on the rather broad lip, in front of the crest. The flower is most comparable with a good O. × Andersonianum Ruckerianum. It is a bright and very attractive hybrid, and is specially interesting as a secondary hybrid of known origin in the O. × Andersonianum group. It may be remembered

that O. × Fascinator (*O.R.*, xiii., pp. 201, 202, fig. 43 bears a precisely similar relation to O. × Adrianæ.

It affords curious matter for speculation as to what this plant would have been called had it appeared in an importation of O. crispum. Some would probably have regarded it as a spotted crispum, and others a good form of O. × Andersonianum, for the limits of the two are not well defined. It is doubtful if anyone would have guessed its exact parentage, though with the record it is easy to trace the resemblances to the two parents. It will be interesting to match it or to find the nearest approach to it among

Fig. 15. ODONTOGLOSSUM CRISPUM HELIOTROPIUM.

importations of O. crispum, for it has long been suspected that certain "spotted crispums" were of hybrid origin, and the extreme polymorphism of O. × Andersonianum has been equally puzzling. The production of secondary hybrids of known origin should throw a flood of light on this question, and we hope to see what the other seedlings are like when they flower.

It may be interesting to give an illustration of the pollen parent, O. crispum heliotropium (Fig. 14) for comparison. This, it may be remembered, is a plant from the collection of R. Brooman White, Esq., of Arddarroch, N.B., which received a First-class Certificate from the R.H.S. in April, 1897. The ground colour of the flower is bright lilac-rose, and the spots red-brown.

Mr. Stewart also sends a painting of another seedling flowered last year, under the name of Mrs. Robert Stewart. It is a cross between O. × Adrianæ and O. crispum Jeanette, and thus is a form of O. × Fascinator, which may be called var. Mrs. Robert Stewart. It has broad, cream-white segments, slightly flushed with rose, and blotched with red-brown, most of the blotches being near the centre of the segments and thus forming an irregular zone. It bears a strong resemblance to a fine form of O. × Adrianæ.

ORCHID BEETLES.

THE Coleopterous parasites of Orchids are not numerous, and although they have been known for many years they are none the less dangerous enemies. All are of exotic origin.

The one first described was a Longicorn beetle, Diaxenes Dendrobii, found about 1894 in houses containing Dendrobium nobile, with which it had been imported. Its relatively large size renders its capture easy, in spite of its nocturnal habits. It has not been seen in houses now for several years, and is a rarity in Entomological collections.

Xyleborus morigerus belongs to the Bostrichides or wood-borers, and though much smaller in size than the Diaxenes, it is much more dangerous. It was found for the first time in London on some Dendrobium Phalænopsis imported from New Guinea, and was described in 1894 by Mr. Blandford. At Marseilles, in 1896, I found examples of the same species. The specimens which I sent to Dr. Chobaut, of Avignon, were the object of an interesting study, from which I have taken the following information. The female attacks the pseudobulbs, making a tunnel perpendicular to the axis. She lays her eggs in the centre of the pseudobulbs and then dies, sealing up the tunnel with her corpse. The imprisoned grubs hollow out a sort of small chamber, the walls of which become blackened: in this chamber they change to the chrysalis stage, and from it they emerge when reaching the perfect state. The male and female are so dissimilar that at first one may easily mistake them for two distinct species. The female is reddish brown, and 1·3 millimetres in length. The male is of a yellowish colour, and only 0·6 millimetres in length. The generations of this insect succeed one another with such rapidity that it can do considerable damage. Moreover, as I have noticed at Marseilles, it does not hesitate, if need arises, to attack the pseudobulbs of Lælias and Cattleyas. A plan sometimes recommended for destroying this insect is to eject carbon disulphide with a hypodermic syringe into the tunnels hollowed out by it. This delicate method does not give very good results, and in my opinion the best method is to cut away the affected pseudobulbs.

In 1898, some Phalænopsis imported by M. Langlassé brought with

them a new or no less dangerous, the genus Apotomorrhinus, of which [illegible] this time, two subspecies [illegible] Mr. [illegible] in April, 1898. In September of the same year I found one on a Phalænopsis amabilis from the same source. It is probably a new species. The insect can easily be recognised by its proboscis. It is from three to four millimetres in length, of a blackish brown colour, and its habits are nocturnal. Its grubs live in the collar of the Phalænopsis, while the adult gnaws the leaves and the flower spike. Since it multiplies very rapidly, it can do much damage. At M. Conston's place I have verified that it also attacks Selenipediums, for S. × Sedeni and S. × grande had **their leaves eaten by the Apotomorrhinus.**

Shortly after this time I received direct from a grower in Singapore some Phalænopsis Aphrodite and Schilleriana. On examining them, I found in the centre of a P. Aphrodite another Apotomorrhinus, but of a different species. It was smaller in size, and its wing-cases had spots of a yellowish white. Its habits are probably the same as those of the preceding species.

Lastly, in February of this year, I received from my friend, M. Maron, the well-known nurseryman, an example of another Apotomorrhinus, which had been sent to Marienfelde by M. Rene Gaveau, who gave the following information concerning it:—"This insect was introduced with some Phalænopsis amabilis var. Rimestdiana, and we have killed hundreds of them. It generally gets into the sphagnum between the roots of the plant: it comes out at night, and attacks, for preference, the young leaves and the flower spikes. When a young leaf is attacked, in contact with moisture it rapidly decays. If it is a flower spike which is attacked, the buds quickly turn yellow and drop off. The grub attacks only the collar of the plant, which it sometimes manages to completely cut off." This insect has been described under the name Apotomorrhinus Orchidearum. While resembling very much that found in M. Langlesse's importation, it differs from it in **the spotting of the wing-cases.**

To be free from this insect, in the first place, never introduce a Phalænopsis into your house before carefully examining the leaves and the collar of the plant. Then, if an established Phalænopsis is noticed with its leaves eaten, the sphagnum should be searched for the insects. It should be remembered that in default of Phalænopsis the insect can live on Selenipediums and probably other tender-leaved Orchids.

At present the only Orchids known to introduce these Orchid beetles

are Dendrobium nobile and the three species of Phalænopsis mentioned, but the importations should be watched, and the insects destroyed before they have a chance to establish themselves.

F. DENIS.

Balaruc les Bains.

OBITUARY.

COUNT KERCHOVE.—It is with great regret that we hear of the death of the well-known and highly-esteemed President of the Société Royale d'Agriculture et de Botanique de Gand, Comte Oswald de Kerchove de Denterghem, which took place on March 20th last, after an illness of about three weeks duration. A sympathetic notice appears in the *Gardeners' Chronicle*. The deceased gentleman was well-known to Orchidists through his writings, including his well-known work, *Le Livres de Orchidées*,—published in 1894, and reviewed at pp. 267, 268, of our second volume—and also in connection with the Ghent Quinquennial Shows, over which he presided with such conspicuous ability. He was born on April 1st, 1844, and thus was in his 62nd year.

H. M. POLLETT.—Another well-known Orchidist passed away on March 20th, in the person of Mr. H. M. Pollett, who died at his residence, Fernside, Buckley, in his 78th year. Mr. Pollett was for a long period an enthusiastic cultivator of Orchids, though his collection was for the most part disposed of in 1891 and 1893, the sale catalogues being illustrated by a series of coloured plates—see *O.R.*, ii. pp. 201, 204. As recently as last year he was a member of the R.H.S. Orchid Committee. He was well known as a printer of horticultural catalogues and other documents. His name is commemorated in Odontoglossum, Oncidium, and Cypripedium, all of which include hybrids under the specific name of Pollettianum.

UNUSUAL FLOWERING OF CŒLOGYNE CRISTATA.

A CURIOUS circumstance is recorded by Mr. Fred. Crittenden in a recent issue of the *Gardeners' Chronicle*. He remarks:—"I have just had the opportunity of seeing a fine plant of Cœlogyne cristata, and another of *C.* cristata var. Lemoniana, cultivated at Broomfield Lodge, Chelmsford, by Mr. Pragnell, which are now in magnificent flower for the third time within thirteen months. The plants, which were originally in the possession of Mr. Warner, have been grown at the cool end of a stove for some years, being removed to the house when in flower and kept slightly dry for a short time of rest. Last March they bloomed profusely, again in the autumn of last year, and are now a third time covered with fine flowers." The writer concludes by asking if any one else has noted a similar occurrence, and if so under what conditions?

PAPHIOPEDILUM MASTERSIANUM.

In the last number of the *Orchid Review* you discuss the habitat of Paphiopedilum Mastersianum. I remember receiving the plants of this species when at Mr. Ball's. They came in a Wardian case from the Botanic Gardens, Buitenzorg, Java, hence it was assumed that they were Javanese. If I remember rightly, the Buitenzorg authorities did not know the habitat. We were a long time before we could find this plant, but ultimately Micholitz found it in Amboina, and we received here a very fine importation.

St. Albans. JOSEPH GODSEFF.

NOMENCLATURE OF HYBRIDS.

We are glad to see an interesting feeling in favour of regarding all hybrids between the same two species as forms of one, though at times some rather knotty points are involved. For example, on February 22nd last a First-class Certificate was given to a handsome hybrid between *C. Lawrenceanum* and *C. callosum* Sanderæ, under the name of *C.* × Amy Leemann, and a discussion arose as to whether it ought not to be considered as a form of *C.* × Mandiæ, which was derived from the same two species. Objection was taken to this course on the ground that the latter was an albino, derived from two albino parents. The problem was submitted to us, and we suggested that both coloured and albino hybrids between the same two species were forms of one, for which the original name was *C.* × Mandiæ, and although the hybrid between the coloured types had not been recorded its appearance might be expected at any time, and in our opinion would have to bear the same specific name. It would then be a very nice question whether this or the original *C.* × Mandiæ was the type. Mr. Harry Thorpe, of Boothroyden, Middleton, now writes: "I submitted your letter to our Committee, as promised, and proposed that the hybrid should be recorded in our books as *C.* × Mandiæ var. Amy Leemann, and that in future the specific name first registered should be adopted before the varietal name. This was duly seconded, and after considerable discussion carried by a large majority, and is thus recorded in our Minutes. The colour of *C.* × Mandiæ var. Amy Leemann is very slightly modified from the Lawrenceanum type, the albino having had very little effect on it; still, you could discern its influence to some extent. Mr. Keeling, of Bradford, Yorks., has a plant of his own raising between the coloured types of the two species. It flowered last year for the first time. You may imagine the colouring, but he describes it as larger in all its parts than the albino Mandiæ. It is again showing for flower, and he will show it shortly at one of our meetings." **We should like to see the flower.**

ORCHIDS IN SEASON.

SEVERAL beautiful flowers are sent from the collection of R. le Doux, Esq., West Derby, Liverpool, by Mr. Davenport. There are three forms of Odontoglossum maculatum, the variety marlfieldiense having a large flower, and the petals broad and much blotched with brown. A second is typical in size, but most of the spots on the petals are confluent into one. The others are a good dark O. triumphans, the chaste Dendrobium × Apollo album, D. × Ainsworthii amœnum, a beautiful white form having a very large feathered blotch on the lip, D. × A. splendidissimum, and three very distinct forms of D. nobile, namely, the pure white D. n. album, D. n. Balliæ, having the disc of the lip pink, and a curious form with a large maroon-purple blotch on the inner halves of the lateral sepals, as in D. n. burfordiense. This is said to have been purchased as a seedling from D. n. nobilius × D. n. Cooksonianum, a point which we should like to have confirmed, as it would be very curious to find that the blotch on the petals of D. n. Cooksonianum could be transferred to the sepals in this way. The plant is said to be very small at present.

Two racemes of the pretty little Calanthe rubens are sent from the collection of Mrs. Fielden, Grimston Park, Tadcaster, by Mr. Clayton, who remarks that they were sent home from the Federated Malay States. It is like a miniature edition of C. vestita, and the flowers in this case are light pink, with a darker crimson eye. The species is known to vary from pure white to rosy crimson.

A number of beautiful Orchids are sent from the collection of J. J. Neale, Esq., of Penarth. First must be mentioned a beautiful inflorescence of Oncidium Cebolleta with six side branches and an aggregate of over fifty bright yellow flowers spotted with red-brown on the sepals and petals. Mr. Haddon remarks that the plant is grown in a basket suspended from the roof of the Warm house, and looks quite a picture with its pendulous leaves and six upright spikes. There is also a five-branched inflorescence of Epidendrum Stamfordianum, and flowers of the beautiful Cattleya Lueddemanniana, a fine C. Trianæ from a small imported plant, C. l. delicata, and Lælia cinnabarina, L. harpophylla, and L. Jongheana. The Odontoglossums, Mr. Haddon remarks, are now making a nice show, and he sends a spike of the pretty little O. pulchellum, with single flowers of O. Hallii, sceptrum, luteopurpureum, × Adrianæ, × Coradinei, Pescatorei, cirrhosum, Rossii, Cervantesii, crispum, cordatum, maculatum, light and dark forms of O. triumphans, and two forms of O. × Andersonianum, forming a very interesting series. Dendrobium is represented by D. nobile, aureum, × Ainsworthii, Findlayanum, crepidatum, and D. crassinode Barberianum. The remaining flowers are Masdevallia caudata, M. Troglodytes, M.

radiosa, Rodriguezia secunda, Cymbidium pendulum, and Pleurothallis dichopus, one of the smaller species of the genus.

Two beautiful natural hybrid Odontoglossums are sent from the collection of W. J. Armstrong, Esq., Low Wood Hall, Nether Wasdale, Cumberland, namely O. × Wilckeanum, a fairly typical form, and a very fine O. × Adriance, with broad segments and more of the crispum shape than usual. The ground colour is cream yellow, and the spots are somewhat aggregated towards the centre. They came out of an importation by M. Fl. Claes, of Brussels, and the circumstance suggests the possibility of the appearance of a hybrid between O. luteopurpureum and O. Hunnewellianum, which we have more than once suspected. Perhaps M. Claes can tell us if his plants came from a single district or not.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during April, on the 3rd and 17th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. The subjects chosen for the special competition on these dates are:—April 3rd. Cymbidium and its hybrids; and Masdevallia and its hybrids; April 17th, Odontoglossum crispum, Pescatorei and triumphans, spotted and unspotted, with their hybrids. This should bring together an interesting display.

The Manchester and North of England Orchid Society will hold meetings at the Coal Exchange, Manchester, on April 5th and 26th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 o'clock.

A new horticultural journal has just made its appearance, entitled the *Irish Gardener*. The first issue (March) contains an interesting account of the Royal Botanical Gardens, Glasnevin, with an illustration showing a corner in one of the Orchid Houses, and a portrait of the genial Curator, Mr. F. W. Moore, A.L.S.

The Spring number of the *Journal of Horticulture* (March 8th) contains an article entitled "The Orchid Revolution," by Mr. R. A. Rolfe, which is continued and concluded in the issue for March 22nd.

ORCHID PORTRAITS.

ARACHNANTHE ANNAMENSIS, Rolfe.—*Bot. Mag.*, t. 8062.

CALANTHE × BRYAN. —*Garden*, 1906, i. p. 172, with fig.

CALANTHE × VEITCHII (at Fulshaw Hall, Cheshire.) —*Journ. Hort.*, 1906, i. p. 177, with fig.

CATTLEYA × OCTAVE DOIN.—*Journ. Hort.*, 1906, i. p. 201, with fig.

CYPRIPEDIUM BOXALLII NIGRESCENS.—*Gard. Alb.*, i. p. 39, with fig.

DENDROBIUM × CURTISII.—*Garden*, 1906 i. p. 145, with fig.

DENDROBIUM NOBILE (with 1,172 flowers). —*Journ. Hort.*, 1906, i., p. 273, with fig.

DENDROBIUM NOBILE ALBUM.—*Garden*, 1906, i. p. 160, with fig.

LÆLIA ANCEPS SCHRŒDERIANA.—*Garden*, 1906, i. p. 188, with fig.

LÆLIA × NEMESIS TRING PARK VAR.—*Gard. Chron.*, 1906, i. pp. 130, 131, fig. 51.

LISSOCHILUS HORSFALLII, BATEM. —*Gard. Mag.*, 1906, pp. 192, 193, with figs.; *Gard. Chron.*, 1906, i. pp. 200, 201, fig. 77, and suppl. t.

ODONTOGLOSSUM CRISPUM PITTIANUM. —*Gard. Chron.*, 1906, i. pp. 196, 197, fig. 75; *Gard. Mag.*, 1906, p. 212, with fig.

ODONTOGLOSSUM × FOWLERIANUM. —*Gard. Mag.*, 1906, pp. 180, 181, with fig.; *Garden*, 1906, i. p. 173, with fig.

ODONTOGLOSSUM × LAMBEAUIANUM. —*Journ. Hort.* 1906, i. p. 229, with fig.

ODONTOGLOSSUM × SMITHII.—*Gartenwelt*, 1906, p. 260, with fig.

PHALÆNOPSIS GLORIOSA.—*Gard. Alb.*, i. p. 40, t. 11.

PLEIONE YUNNANENSIS, Rolfe. *Journ. Hort.*, 1906, i. p. 251, with fig.

SOPHROCATTLEYA × DORIS. —*Gard. Mag.*, 1906, p. 209, with fig.

CORRESPONDENCE.

(Correspondents are requested to give any further particulars on the following notes, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage should always be stated, or without full details we are not always able to deal with them satisfactorily.)

W. M. A. Acanthophippium sylhetense.

E. A. Schomburgkia undulata.

Hybrid No. 7. We have no record of a hybrid between Lælia purpurata and L. flava.

J. W. Odontoglossum apterum, better known under its later name of O. nebulosum. We cannot see why the flowers failed to open well, unless it was a touch of fog. It seems to be agreed that Odontoglossum seed is best sown on the compost of the plants themselves, care being taken to prevent it from becoming dry.

Received with thanks. New List of Orchid Hybrids, by Messrs. Sander and Sons, St Albans.

M. J. P. We will try to report next month.

F. D., and others. Flowers duly received, but notes are unavoidably held over. Three articles in type are also crowded out, but will appear in our next issue.

Photographs received, with thanks. G. L., A., R. S.

We have received from the Agricultural and Horticultural Association, Ltd., 92, Long Acre, W.C., the following, "Home and All" Handbooks. The Culture of Sweet Peas, by Richard Dean, V.M.H., F.R.H.S.; Perennials, by J. W. Saunders, F.L.S. Vegetables, by Horace J. Wright, F.R.H.S., and Salads, by the same author. They are practical little works, well illustrated, and are sold at the low price of one penny each.

Subscriptions for 1906 are now due.

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An Illustrated Monthly Journal of Orchidology.

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- Schroderæ, Westfield variety, A.M., R.H.S.
- ,, Trianæ alba Wellesleyæ

Lælia Perrinii nigrescens, A.M., R.H.S.
- ,, Purpurata Littleana, F.C.C., R.H.S.
- ,, anceps Amesiana, Crawshay's variety, F.C.C., R.H.S.
- ,, anceps Chamberlainiana, F.C.C., R.H.S.
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Lælio-Cattleya Cappei Charlesworth's variety, F.C.C., R.H.S.
- ,, Gottoiana, Mrs. Rogers, A.M., R.H.S.
- ,, Helena, Westfield variety, A.M., R.H.S.
- Wellsiana magnifica, A.M., R.H.S.

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- ,, ,, Venus, A.M., R.H.S.
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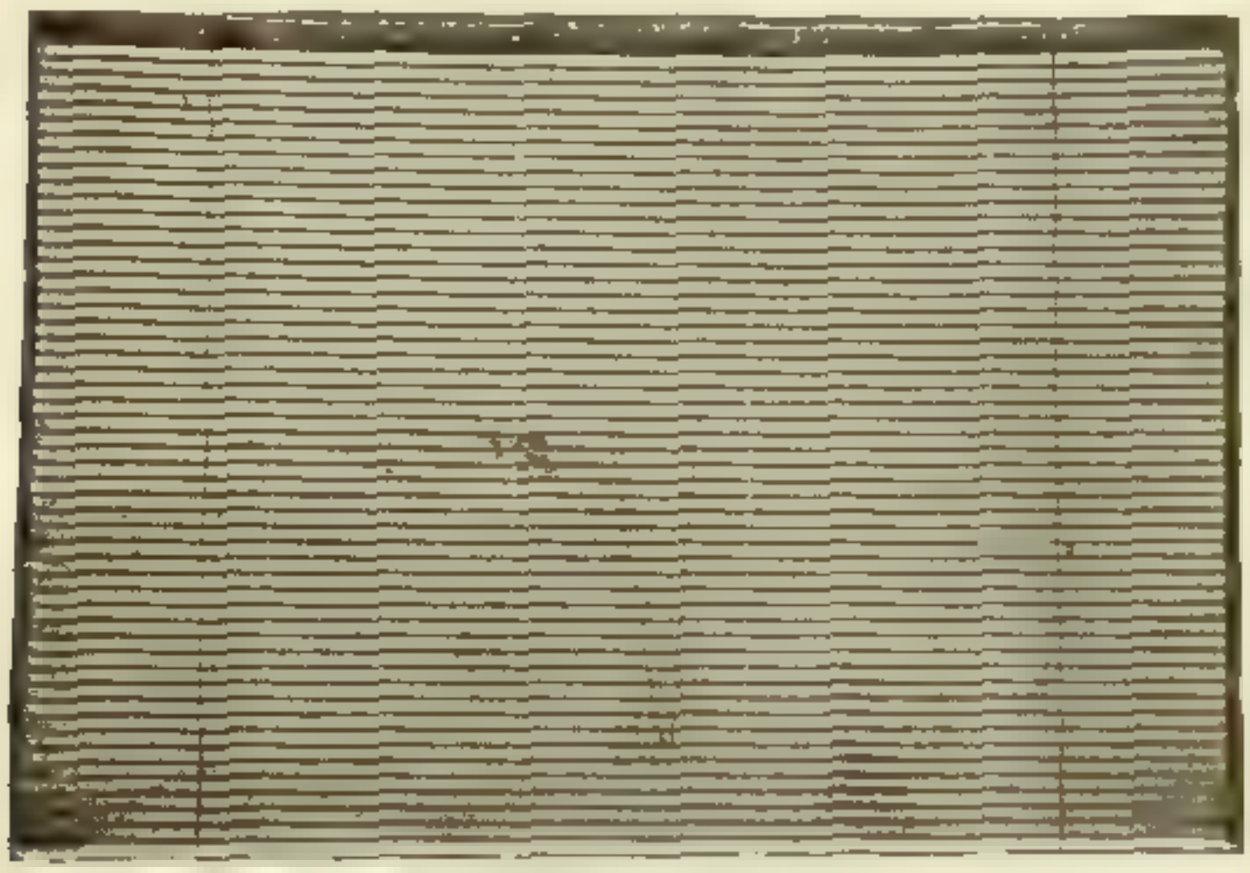

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THE ORCHID REVIEW.

VOL. XIV.] *MAY*, 1906. [No. 161.

THE IDEAL ODONTOGLOSSUM HOUSE.

I HAVE been asked to give some "ideas for an ideal Odontoglossum house, including the question of position, construction, arrangement, &c.," and while gladly consenting to do my best, it is in the full knowledge that there are many others whose success in the cultivation of this genus has been much more marked than mine, and whose views on that account would be of much more interest. I trust, however, that some of them may be persuaded to follow up these notes with observations, so that in the end the really best possible Odontoglossum house may be evolved.

Some years ago I wrote in the *Orchid Review* (vol. viii., pp. 107 109) some incomplete notes on the construction of Orchid houses, and now, after five years' further experience, there does not seem much that I should care to alter, although there are some points that might be further emphasized.

POSITION. The house should run due north and south, so that each side may have an equal amount of light. Probably from the time the blinds are no longer required in the autumn until they are wanted again in the spring the Odontoglossum benefits more from the light than it does during the summer. These plants love a cool light; hence the direct, cool rays of the low sun add so much to their stamina. The torrid summer sun is not what Odontoglossums like, and the flowers are thinner in July and August than in May, and the same might be said of the foliage. It will be fruitless and invidious to draw comparisons between one locality and another, as each grower must make the most of the locality in which he finds himself, but if for any reason the Odontoglossums do not get the benefit of the light of winter, the foliage and bulbs will not have that russety violet look of good health, nor will the flower spikes be so strong and woody, nor will the flowers be of such good substance, shape and colour, in the spring. Apart from the question of light, many things may militate against the production of good flowers, but, other things being equal, the house which catches the winter light to the fullest extent will give best results, and up to this point I think we are all agreed.

CONSTRUCTION, ARRANGEMENT, &c.—Size must of course be largely a consideration for the builder and his ambitions, but a very small house has some drawbacks. A house of small cubic measurement fluctuates readily—it is too susceptible and responsive to all changes of the outside conditions, and when air is given in quantity the atmospheric moisture leaves it quickly. Shading must be lowered sooner in the day on a small house than on a large one, and kept on longer into the afternoon. So far everything seems in favour of the large house, but the large house has some minor drawbacks as well. Once the temperatures get low in large houses a good long time must pass before they can be got up again, and for careful work, such as raising seed, the small house (not too small) is preferable, as—although it may mean a lot more attention—it *can* be regulated. For growing a large quantity of stuff, one large house is better than several small ones—if only for the reason that it will mean much less work.

At this point we might strike out and say that there could be two ideal Odontoglossum houses—the small one without centre staging, and the large one with centre staging. A rational and economical width for a house without centre staging is twelve feet outside measurement, which, after deducting the eighteen inches taken up by the nine-inch brick sides, will give us an interior width of ten feet six inches. Allowing a three feet wide pathway—which is quite narrow enough—there is left a staging space of seven feet six inches, or three feet nine inches on each side of the pathway. The sides should be four feet high, and of brickwork to the eaves, and the height of the house from apex to floor level eight feet. A proportionate length for a house of this width might be 40—60 feet, but that must be regulated by the number of plants it is intended to cultivate. A sufficient quantity of piping for this house would be two rows on one side and three on the other.

It is usual in Orchid houses to have a second stage underneath the one on which the plants are standing. This serves the double purpose of keeping the heat from the pipes from going direct up through the plants, and holding material which will give off moisture. In all houses it is desirable that the two stagings should be well apart, so that a free circulation of air may pass between the two, and I would now like to ask if some modification of this middle staging could not take place in the case of Odontoglossums. When it is remembered that no heat is required in the Odontoglossum house for probably six months out of the year, and that buoyancy is ever essential, the necessity of retaining the orthodox middle staging does not seem so absolute. I know two places where this staging has been done away with altogether, and the plants are doing much better, they say, for it. It would probably be unwise to go as far as this, but this, I think, is

the direction to keep in. In painting and overhauling our houses recently, we had the moisture-holding stage removed from one of our Odontoglossum houses, and, instead, placed a "break-heat" right down on the pipes, of just sufficient width to overlap them. The plants now dry out much more than before, and the whole house feels atmospherically lighter.

Where large-growing Cool house Orchids are to have justice done to them, it is really very necessary to grow them in a house of roomy dimensions, but there are not many growers who care much for the house with centre staging, because there is always one side being shaded. But the large house, built at the proper elevation, and in the right position, does Odontoglossums splendidly, and more so after they have been in cultivation here for several years after importing, and are well furnished with foliage, &c. The practicing of large specimens is really much encouraged when a house is at hand suitable for the purpose.

I should have left it on my giving measurements for a large house, as so much will depend on individual requirements, and anyone contemplating building one would be well advised to visit an Orchid establishment of repute, and there take measurements, effecting an alteration or improvement, where it suggested itself. It is not a good plan to trust to the horticultural builder, as he has no feeling in the matter, and can only judge things architecturally.

Houses should be fitted with top and bottom ventilators, and each should have a tank for storing rain water.

J. M. Black.

Streatham.

NOVELTIES.

The first issue of the *Kew Bulletin* for 1906, which has just appeared, contains a decade of New Orchids, which, with two exceptions, are in cultivation.

Pleurothallis venosa, Rolfe. A species introduced by Messrs. Sander, with whom it flowered in October, 1899. It is allied to P. Jamieson, Lindl., and has stems six to nine inches high, lance-late-oblong leaves, some five to eight inches long, and slender racemes, rather shorter than the leaves, of numerous greenish flowers, with three dusky brown lines on the sepals, and one on the petals.—*Kew Bull.*, 1906, p. 30.

Cryptophoranthus Mooreii, Rolfe. A species allied to C. hypodiscus, Rolfe, having a dull purple perianth, about ¼-inch long, and undulate wings to the ovary. It was introduced by Messrs. Hugh Low & Co., in 1884, and flowered at the Royal Botanic Gardens, Glasnevin, in September, 1899.—*l.c.*, p. 30.

LIPARIS LLOYDII, Rolfe.—A West African species, described from dried specimens.—*l.c.*, p. 31.

DENDROBIUM SCHINZII, Rolfe.—A species of the Cadetia group, allied to D. lonchophyllum, Hook. f. It is a native of Sumatra, and flowered with Dr. Hans Schinz at the Zurich Botanic Garden, in November, 1899. The flowers are pale green, and very fugacious.—*l.c.*, p. 31.

DENDROBIUM HODGKINSONI, Rolfe.—A handsome species, allied to D. atroviolaceum, Rolfe, but having acuminate sepals and petals, which are light green in colour and unspotted, while the lip is veined with purple in radiating lines, and bears a large, white, shining keeled crest. It is a native of New Guinea, and was introduced by Messrs. Sander, and flowered in their establishment, and also in the collection of Dr. Hodgkinson, The Grange, Wilmslow, in December, 1899.—*l.c.*, p. 32; *Bot. Mag.* t. 7,900.

DENDROBIUM MADONNAE, Rolfe.—A beautiful species, allied to D. Fairfaxii, Rolfe, but having larger white flowers with obovate petals, and some dark violet-purple spots at the apex of the side lobes. It is a native of New Guinea, and was introduced by Messrs. Sander, with whom it flowered in December, 1899.—*l.c.*, p. 32.

BULBOPHYLLUM MAHONI, Rolfe. A Central African species, allied to B. aurantiacum, Hook. f., described from dried specimens collected at the Mlanje foot-hills at 4,000 feet elevation by the late Mr. J. Mahon. —*l.c.*, p. 32.

ZYGOPETALUM BALLII, Rolfe. A species of the Zygosepalum group, allied to Z. rostratum, Hook. It was introduced from the province of Pernambuco, together with Cattleya labiata, by Messrs. John Cowan & Co., and flowered in the collection of G. S. Ball, Esq., Ashford, Wilmslow, in June, 1898. The sepals are light reddish-purple, margined with cream-white, the petals similar, but mottled near the apex, and the lip violet-purple in front, and white with purple veins and markings behind and on the crest.—*l.c.*, p. 33.

PESCATOREA COCHLEARIS, Rolfe.—A handsome plant, native of the Andes, which flowered in the collection of Frau Ida Brandt, of Zurich, in November, 1899. It is allied to P. Dormaniana, Rchb., f., but differs in having a cochleate lip. The sepals and petals are ivory-white on the lower part and reddish-maroon above, while the lip is white, with the crest, tubercles, and column maroon.—*l.c.*, p. 33.

COLAX TRIPTERUS, Rolfe. A Brazilian Orchid, allied to C. placanthera, Lindl., but differing in having a three winged ovary and a broad, fleshy callus on the lip. It flowered in the Royal Botanic Gardens, Glasnevin, in June, 1896. The sepals and petals are light green, the latter densely speckled with dark brown, and the lip yellowish white, with lines of minute light purple dots on the fleshy base.—*l.c.*, p. 34.

ORCHIDS AT CLARE LAWN.

THE rich collection of Orchids at Clare Lawn, East Sheen, the residence of Sir Frederick Wigan, Bart., always contains something of interest, and when calling on Mr. Young the other day we observed several new or rare things.

In the Cool House many good Odontoglossums were in bloom, including nice batches of O. Rossii and O. Cervantesii, with O. Rolfeæ, O. Lambeauianum, O. apterum, two good O. × elegans, O. × Wilckeanum, very good pure white and blush forms of O. crispum, and a fine O. × Adrianæ unnamed. O. Humeworthianum then the majority. White there were a few bright Masdevallias, well flowered Sophronitis grandiflora, Cœlogyne Dayana showing seven spikes, some good Cypripedium Lowii, a good specimen of Miltonia vexillaria with ten spikes, and over fifty flowers, and the rare hybrid zygopetalum × Ventnorense, which recently formed the subject of a plate in the *Botanical Magazine* (t. 7,980).

In other houses we noted the striking bracteata, the Annamese Cymbidium Schroederi, a fine form of Oncidium sarcodes, a fine-flowered Dendrobium Bymerianum, and Lælia Boothiana with three spikes. Mr. Young does not regard this as difficult to flower in a light position.

A Warm house contained two plants of the purple Vanda Parishii Marriottiana in flower, with a nice batch of Cypripedium niveum, Megaclinium falcatum, with over a dozen of its curious spikes, Spathoglottis × aurea-Vieillardii, and the handsome Zygopetalum × Rochfordianum showing three spikes.

The Phalænopsis house is always a centre of attraction, and among a lot of plants in flower we noted good examples of P. Schilleriana and amabilis, P. sumatrana with three spikes, P. Mannii, P. fasciata, and nearly a dozen P. Lueddemanniana, which propagates itself freely from the old flower spikes. The free-flowering and striking Zygopetalum × Rolfeanum was again in flower, producing three spikes, together with Angræcum Sanderianum, Miltonia Roezlii, and several good Cypripedes, the more noteworthy being C. × Lara, C. Mastersianum with several blooms, C. × delicatum, a fine form of C. × Ketchoveanum called W. H. Young, and a lot of C. barbatum and Lawrenceanum, one abnormal flower of the latter having the sepals united, and lateral, while a single petal occurred on the opposite side of the flower.

In a small lobby at the entrance of this house a good plant of Dendrobium Falconeri thrives, being syringed several times daily, and was producing numerous spikes, while in the rock house the fine Cymbidium × l'Ansonii was in bloom with several good C. Lowianum, and Dendrobium infundibulum.

BRASSOCATTLEYA × ORPHEUS.

I HAVE been much interested in your note at p. 49 on Mr. Orpet's Brassocattleya × Orpheus. Some little time ago I bought a plant of this hybrid in flower. I cannot say what sort of Trianæ the parent was, but have always supposed that it was an ordinary Trianæ. Be that as it may, the result when I bought it was a flower of most delicate colouring. Of course Brassavola glauca is not a pure white, but has a kind of underlying yellow or cream colour. This blended beautifully with the pink of the Trianæ, and produced all kinds of tenderest pinks, mauves and pale yellows, blending with and melting into each other. The name "Sunrise" is already appropriated. But I cannot but think that its Godparents missed an opportunity when they failed to name this hybrid "Dawn."

The plant throve with me, putting forth two bulbs in the year and flowering upon each. Then it grew only once in the twelve months, and the bulb was larger, but the flower was altogether different in colour. The sepals and petals were of a pale blush, while the lip was pale yellow, rather the colours of C. Harrisoniæ.

When next it started into growth I cut the rhizome behind the third bulb, with the result that the leading bulb is smaller, and the flowers went back to the original colouring, which, but that its hues are of a dead colour and show no light in them, I should be inclined to term opalescent. From the severed portion I have three small bulbs, one of which threw up a sheath and bud, which I pinched off.

The change in the colouring of the flower is coincident with the larger bulb. This might be nothing of importance or significance, but when with a smaller bulb it returns to the original colouring, one cannot fail to recognise strong grounds for the application of the *post hoc, ergo propter hoc* argument and for considering that the type, *qua* colouring, of the bloom is dependent upon the strength of the bulb. Assuming that to be the case, as the original colouring is infinitely more beautiful than when the colours were distinctly separated, one must be careful not to get one's plant too vigorous, a contingency against which, as a rule, the orchidist has no reason to guard himself or his plants.

I should like to point out that had I sold the plant in sheath, when it was making up its strong bulb, from a painting or description, I think that the purchaser, when it flowered with him, would have been quite justified in making some strong remarks as to my *bona fides*, although I should have been most innocent.

JOHN EDWARDS-MOSS.

Thamesfield,
Henley-on-Thames.

THE HYBRIDIST.

BRASSOCATTLEYA × MRS. FRANCIS WELLESLEY. A large and very handsome hybrid, bearing the above name, was exhibited at the R.H.S. meeting on April 17th, and was awarded a First-class Certificate. It was derived from Cattleya Lueddemanniana ♀ and Brassavola Digbyana ♂, and the flower sent measures over a foot across its broadest diameter, while the lip is 3½ inches broad, and is very beautifully fringed and undulate. The colour may be described as delicate rose-rose, with darker veins, while the disc is light yellow. The shape is excellent, and we believe it is the finest Brassocattleya which has yet appeared.

LÆLIO-CATTLEYA × ROSSETTER. This is a very highly coloured hybrid raised in the collection of Major G. L. Holford, West Gilbert Letheby, from Lælia × Latona ♀ and L. c. × Canhamiana Rex the variety with pure white sepals and petals ♂, and is a great improvement on the seed parent, being equally rich in colour, but larger and of better shape, especially in the lip. Mr. Alexander states that the seed was sown on February 20th, 1903, and this is the first to bloom. Others, however, are approaching the flowering stage, and some interesting results are expected from this batch of seedlings.

BRASSOCATTLEYA × BALARUCENSIS. An interesting hybrid derived from Lælio-cattleya × Schilleriana ♀ and Brassavola Digbyana ♂ is sent by M. F. Denis, Balaruc les Bains, Herault, France. The flower most resembles the seed parent in general shape, including its three-lobed lip, the margin, however, being fringed as in other Digbyana hybrids. The colour may be described as white, with some purple marbling on the sepals and petals, more or less flushed and marbled with purple near the apex of the segments, and a trace of light yellow on the disc. M. Denis remarks that last year the flowers were not marbled, but the plant has recently been re-potted.

LÆLIO-CATTLEYA × DENISH. This is another interesting hybrid raised by M. Denis, from Lælia × superbiens ♀ and Cattleya Lueddemanniana (speciosissima) ♂, and now flowering for the first time. The scape at present is about eighteen inches long, and carries four flowers. The hybrid bears a considerable general resemblance to L. c. × Choletiana in which C. Lueddemanniana is replaced by C. Mossiæ, having long rose-pink sepals and petals, and a three-lobed, rose-purple lip, with a yellow disc, from which radiate numerous purple lines, both on the front and side lobes. M. Denis remarks that the plant is about six years old, and we may add that it shows the strongest possible evidence of its Lælia superbiens parentage. It is the third hybrid from this species which has reached the flowering stage.

PAPHIOPEDILUM × IMOGENE.

THE annexed figure represents the prettily-spotted Paphiopedilum × Imogene, and is reproduced from a painting in the collection of Francis Wellesley, Esq., Westfield, Woking. It is a hybrid between P. × Arthurianum ♀ and P. ciliolare ♂, and was acquired from Messrs. Charlesworth and Co. The dorsal sepal is spotted with reddish brown, except near the cream yellow margin, and the petals are also similarly spotted on a lighter

Fig. 16. PAPHIOPEDILUM × IMOGENE.

ground, while the lip is suffused with purple-brown in front. The characters of P. Fairrieanum are to a great extent obliterated in the flower, but those of P. insigne and P. ciliolare are more easily traced, and there is a marked resemblance to the hybrid known as Sir Redvers Buller, in which the two species last mentioned are also represented. That, however, is larger and more deeply spotted, and of somewhat different shape to the hybrid we are figuring.

ODONTOGLOSSUM CRISPUM QUEEN OF THE EARTH.

A PHOTOGRAPH of a very handsome Odontoglossum, bearing the above name, has been sent to the Editor by Mr. De Barri Crawshay, Esq., Rosefield, Sevenoaks, to whom the Award of Merit has been granted. The plant was purchased at the Sale at Messrs. Protheroe and Morris on March 23rd last, the vendor being M. Chas. Vuylsteke. Its pedigree, it seems, not to be known. We quote from the following note:

"One of the most beautiful flowers, and by far the most remarkable,

Fig. 17. ODONTOGLOSSUM CRISPUM QUEEN OF THE EARTH.

was a fine purple blotched Odontoglossum sent by M. Chas. Vuylsteke, and about which there were conflicting opinions as to whether it was to be considered a crispum or an ardentissimum. It had considerable resemblance to O. × ardentissimum in the sepals and petals, but the labellum indicated O. crispum. Sold without name or qualification, it was acquired by De Barri Crawshay, Esq., for 300 guineas." *Gard. Chron.*, 1906, i., p. 197. Mr. Crawshay says he has a letter from M. Vuylsteke to say that it is not an ardentissimum cross. Probably not, but we are

not satisfied that it is not a Pescatorei cross, for it seems as near to ardentissimum as to a spotted crispum, and although the hybrid just named was originally exhibited, with three others, without any indication of origin, we immediately recognised them as hybrids between O. crispum and O. Pescatorei (See *O. R.*, x., p. 210.). In this case, however, we have not seen a living flower. Mr. Crawshay describes the ground colour as white, and the blotching rich plum purple, the exterior edges of the blotches being a shade darker than the centre, and the markings of the lip bright brown. The spike bore five flowers, but we have omitted the lower one owing to considerations of size. The photograph is by Essenhigh, Corke & Co., Sevenoaks, and Mr. Crawshay remarks that the apical bloom is slightly exaggerated. The shape of the flower is excellent, and whatever the origin of the plant it is a very handsome acquisition. It may be possible to clear up the doubtful point hereafter, but we cannot help repeating the remark of a correspondent who has written to us upon this question, that we are getting too many of these hybrid Odontoglossums of doubtful origin.

CALENDAR OF OPERATIONS FOR MAY.

By J. M. BLACK, STREATHAM.

OWING to the very great amount of sunshine that we have enjoyed during the past month or six weeks, plants that have been disturbed by repotting have had every opportunity to re-establish themselves quickly. The large amount of solar heat in the houses so early in the season has given things a good start off, and everything seems pretty forward. It is not considered good practice to hasten things on too much with the advent of spring, for fear of forcing weak growth, but with plenty of light and the heat being natural, there is little fear of that happening this year. In any case, no reproach can be made for hastening growth this month, for now every encouragement should be given to it. I endorse the pretty general practice of closing all ventilators, with the exception of the Odontoglossum house, about half-past three in the afternoon, admitting again at six o'clock a chink of air by the bottom ventilators. Where, however, the house is full of bloom, the closing of it might not be permissible, and should be postponed until the flowering season is over.

Cattleyas Mossiæ, Mendelii, Schroederæ, and many Lælias and hybrids are in bloom this month, and care must be taken not to get the blooms spotted with damp. If it is desired to keep the flowers back for any purpose, it is best to group them at one end of the house, so that the syringe can be kept off them, and they can also have special protection given them

from the sun. As the syringe will be now in constant use, it will not be fair to neglect a whole house because a few of the plants are in flower.

Plants that have been recently repotted will have to be watered very carefully, for even at this season it is not difficult to make all the roots go black. It is preferable to let the plants suffer a little from drought, which will encourage the roots to break, and the growths will quickly make pace, when it is safe to give good supplies of water. Syringe freely between freshly potted plants of Cattleyas, Dendrobiums, &c., and also overhead **once or twice a day according to the weather.**

The top ventilators will now be called into general use on all houses, although very sparingly on the East Indian one. If a house is devoted to Dendrobiums alone, no top ventilation should be given during this month, admitting air sparingly even by the bottom ones. Any Dendrobium in flower, such as thyrsiflorum, Findleyanum, Dearei, and others which flower about this time, can be removed to the Cattleya house until the flowering is over.

There will now be some difficulty in keeping the Odontoglossum house cool enough to one's liking: if, however, lath roller blinds have been fixed according to directions given in a recent Calendar, the advantage of them being well away from the roof will be felt. It may soon be found necessary to use a second blind on this house, to roll along the glass underneath the top ones, particularly if the houses is of small dimensions.

Potting operations will be kept going again this month. Cattleya Dowiana aurea, C. × Hardyana, C. superba, C. Eldorado, C. Schroederæ, any belated C. Trianæ, &c., will be calling for attention.

Many Phalænopsis will now be starting to make new roots, and can be straightway furnished with new rooting material. Remove the old material wherever possible, and work in new material, without much root disturbance. Clean, green sphagnum moss, a small quantity of half-decayed leaves, and good fibrous peat, with the addition of small pieces of charcoal and coarse silver sand, will make a suitable compost. Work the material in tightly, and finish with living sphagnum. Close shading and careful **watering must follow.**

Most Cymbidiums which require re-potting can have the operation performed this month. As these plants are strong rooters, plenty of root-room must be allowed. A suitable compost is one containing equal parts of good fibrous yellow loam, fibrous peat, and leaf mould, kept open by the addition of sand or broken crocks. Give ample drainage. The Cool house does all the Cymbidiums that are worth growing very well, although perhaps during their active growing season a little more closeness and warmth during the afternoon than can be given to Odontoglossums suits them better. They are, for the most part, of the simplest possible culture,

and, where room can be spared them, the Cymbidiums are most generous plants to grow. Any plants at present in flower or spike must not be disturbed, of course, until flowering is over.

Lycaste Skinneri, &c., which require a shift, should be repotted when the new growth is two or three inches high. The compost for Cymbidiums will also be found suitable for these. They are grown in the Cool or Intermediate house.

Dendrobium Phalænopsis, with the variety Statterianum, D. bigibbum, and the allied D. superbiens are now starting, and the present is the season to re-pot them. These species do not like large receptacles, and should be potted firmly in the compost recommended last month. They do not like root disturbance, and are best left alone when the compost is sweet, even if apparently pot-bound. D. Brymerianum can have the same treatment. D. fimbriatum is a much stronger grower, and should have a much larger pot, but it, too, is shy at being disturbed.

There are a great many other Orchids which will require repotting at this season, which it would be onerous, if not impossible, to name.

POTTING SHED A NECESSITY.—Every Orchid establishment of any pretensions should have a light and commodious potting shed. This should be so constructed that it can be kept warm in winter, and so situated as to be easily got at from all the houses. The practice of potting in the houses in which the plants are growing is, besides being slovenly, most unfair to the operators, for men cannot work with comfort and dispatch under these conditions. Now that the houses are getting very hot, one should spend as little time in them as possible during the height of the day. Watering can be got over before the sun gets very high. When plants are in the potting shed being repotted, tying them up and cleaning them will also be performed, so that the routine work of damping, syringing, and ventilating should be the most that is required to be done actually in the houses during the hot weather.

The potting shed should not be a place for storing away all the old lumber that will accumulate, but a workshop in which tidiness and order should prevail. One should make it a rule never to store away dirty pots, so that clean pots may always be at hand when wanted, packed away in their respective sizes. This may seem a small matter, but where there are many thousands of plants to pot, it is only by method that the work can be got through smoothly. It is a sad spectacle to see a man grubbing about in a heap of dirty pots and pans of all sizes for the size wanted, which, when found, must be washed before work can proceed.

THE ART OF POTTING.—Potting Orchids is not now nearly such a serious business as it was some years ago, and, in fact, the whole question of growing them is now carried on with much less fuss. For every hundred

plants that a man had to look after then he will probably have a thousand to-day, so that each plant cannot now be so long pondered over. A clear recollection of a time I spent in the potting shed of large importers, some eleven or twelve years ago is still with me. The method of potting was to fill the pots three parts full of crocks, and then thump a stick through them to support the plant, the imported Cattleya was then placed on the crocks and fixed to the stick, and the sandy mixture of peat and a little moss was worked in tightly. There was no half measures here: it was tight potting without qualification. The compost was used dry, or nearly so, and the pots were little larger than just to hold the plant. The individual who had the supervising of this department had a novel but decidedly effective way of testing each man's work. He took a hold of the pot and with a quick turn of the wrist tried to shake the plant out: if it dropped out the potting was badly done: if it stood the test, the work had been well and truly performed. It might be mentioned that an element of unfairness sometimes crept in here, for the wrist did not always jerk alike. This Spartan potting is now no more, but was it not, after all, the best method of treating imported Cattleyas and Orchids which grow wild under similar conditions? A good deal is to be said in its favour at any rate. There was here very little material to decay, and what there was of it would for the most part last well: and the roots went straight down into the crocks, without passing through a layer of sphagnum moss. These plants could be given water freely without any danger, and they dried out quickly, which was an enormous advantage. Furthermore, the plant would last with this potting for two or three years, making hard, well ripened pseudobulbs, which yielded blooms of good colour and substance. The fact of plants doing well for some years on such poor fare is a kind of contradiction to the belief in rich potting materials used in large quantities. There is but little question that hard potting is conducive to floriferousness, and small pots and air at the root also assist towards this end. The method of one crock at the bottom of the pot, with a potful of close, rich material, is the farthest we can get in the other direction. Epiphytal Orchids get a plentiful supply of air at the root at home, and we might bear this fact in our mind when potting them.

An amateur in a small way, who grows his own plants, said to me the other day: "You have no idea the difficulty an amateur like myself has in knowing what to do for the best with his plants. You people take too much for granted. I have had absolutely no training, and almost the first Orchids I ever saw were my own." The above remark was made on my telling him that his plants were nearly all much too loosely potted, and to describe in detail how to repot a Cattleya may be a help to many who are likewise situated.

In choosing a pot every regard must be paid to the size of the plant, and the condition in which it is in as to health and roots, and *no* regard paid to the pot in which it has been growing. Very often a plant requires to be put into a smaller pot than the one in which it has been. If the plant is large and well rooted a little liberality may be allowed in the size of the pot, but err by using a pot too small than one too large. As recommended last month, fill the plant two-thirds full of rhizomes—a little less probably if the plant is extra well rooted that have been chopped up into pieces an inch or two long, first placing one large crock over the bottom of pot. The rhizomes must be rammed tightly with the flat end of the potting stick. Having trimmed the plant, as recently described, take it in the left hand and select a good lump of peat with the right, which place up against the rhizome, allowing the roots to hang round it; then lower the plant on to the rhizomes, working the roots round the sides of the pot and underneath the lump of peat. Next ram a stick through to the bottom of the pot, and tie the plant up, so that both hands may be free to complete the work of potting. Work with the fingers the compost in among the roots until the centre is fairly well packed, and then fill in loosely, and work down with the potting stick. Press the compost down the sides of the pot and in, and don't be afraid to press. There will be no fear of bruising a root, as long as it is not actually squeezed with the point of the stick, and take that risk. Finish with alternate pieces of peat and moss, working from the centre of the pot towards the rim. When finished, the last back pseudobulb should be near the edge of the pot, the growing space being in front of the lead, and the lead on a level with the rim of the pot. Each succeeding bulb will rise a little, so that when flowering the lead will be above. If one has to deal with a very small plant, use crocks instead of rhizomes, and **if in bad health, give very little compost.**

SURFACING.—In surfacing we have got to judge by the appearance of the plant and the compost, and also the size of the pot, whether they will go on another year. One can sometimes press the plant back, making more room for the lead without further root disturbance than on one side of the pot. The space thus made can be filled in with fresh material, and the plant will have felt little or no check. Personally I am a very bad surfacer. Starting off with the best intentions in the world, I find myself digging deeper and deeper, until out must come the plant. This is, of course, a constitutional weakness on my part, and there is no doubt but that **surfacing is sometimes most useful.**

The hot weather and the harsh dryness of the East winds are livening up the insect pests, and I would refer readers to the January Calendar for directions how to deal with them. Thrips are beginning to be particularly **active.**

ODONTOGLOSSUM × HUDSONI.

THE fact that Odontoglossum crispum grows in company with four other species in the Bogota district affords an opportunity for the occurrence of ten distinct natural hybrids, and seven of these have already been definitely recognised, five being comparatively common. An eighth can now be added to the list. A plant has just flowered in the collection of Leopold de Rothschild, Gunnersbury House, Acton, which Mr. Hudson states was purchased with imported O. crispum, but on flowering it proved totally different. The flowers are compatable with both O. gloriosum and O. Hunnewellianum, in fact the characters of the two are combined in it, giving a clear indication of its origin. The plant most resembles O. gloriosum, and is quite distinct from O. crispum, the growth being more erect in character. The inflorescence has eight blooms, which have retained much of the general shape and the acuminate sepals and petals of O. gloriosum, except in being broader. The ground colour is light yellow, and the blotches are very numerous and dark brown, in fact they may be described as intermediate between the two species in colour and arrangement. The lip is distinctly panduate, broadened above the constriction and then acuminate, markedly crisped, light yellow, with a whitish disc, and some red-brown blotches in front of the crest, which latter is two-lobed, but the lobes broken up into about four teeth. The column wings are broadly oblong, with a short oblique cirrhus in front and a few teeth behind. It might be roughly described as most like O. gloriosum in shape and O. Hunnewellianum in colour and markings. Its appearance is very interesting. The combinations between O. Hunnewellianum and both O. luteopurpureum and O. Lindleyanum should be looked for, as it would be extremely interesting to complete the series, if these two also occur.

R. A. ROLFE.

CATTLEYA FORGETIANA.

AT the R.H.S. meeting, held on April 3rd last, a very interesting Cattleya was exhibited by the Marquis de Wavrin, Chateau de Ronsele, Ghent, under the name of C. Forgetiana. The two-flowered inflorescence has now been forwarded through Messrs. Sander and Sons. Mr. Sander writes: "Some four years ago I sent Forget up the St. Francisco River. He found little: among other things, two or three plants of this Cattleya. Only this one has flowered. I cannot make it out at all. It is not Brymeriana, and nothing near any other Brazilian natural hybrid. It may be a species. I think it is, in fact; of course, not good enough to collect nowadays, but I think that the near quarters of the St. Francisco River hide many

treasures." The flowers sent represent a Cattleya of the labiata group, most comparable with C. Lawrenceana in size and shape, with a quite similar narrow, trumpet-shaped base to the lip, but differing in having a bright yellow throat, in which respect it recalls C. Eldorado.

The scape sent is six inches long, the bracts broadly triangular-ovate, acute, and two lines long, and the pedicels $2\frac{3}{4}$ inches long. The sepals and petals are bright rosy-purple, and nearly three inches long, the former oblong-lanceolate, and eight lines broad, and the latter elliptical-oblong, and $1\frac{3}{4}$ inches broad. The lip is entire, obovate-oblong, bilobed at the apex, about as long as the other segments, and with the basal two-thirds convolute into a narrow tube. The front lobe of the lip is rich purple-crimson, the margin of the side lobes light rosy-purple, and the disc behind the yellow throat is striped with crimson, the lines being confluent into a deep crimson blotch at the base. The column is clavate, an inch long, the upper half ivory white, and the base crimson, with a white line down the back. The pollinia are four, as in Cattleya, and the affinity is unmistakably with C. Lawrenceana, but the characters and geographical distribution are not in agreement. I have seen nothing like it before, and have little doubt of its complete distinctness.

R. A. ROLFE.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on April 3rd, when there was a very fine display of Orchids. The awards consisted of two First-class Certificates, six Awards of Merit, two Cultural Commendations, and eight Medals, these including one Gold Medal and the Lindley Medal.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), staged a magnificent group, for which the Society's Gold Medal was awarded. In the centre was a very large example of Cymbidium × eburneo-Lowianum, carrying 15 spikes and 107 flowers. Cultural Commendation, and on either side were splendid examples of Ada aurantiaca and the scarlet Masdevallia Veitchiana. There were also good examples of Cymbidium eburneum, C. Lowianum concolor, and C. × eburneo Lowianum var. concolor, Vanda tricolor, V. suavis, Cattleya × Empress Frederick, Heaton var., Lælio-cattleya × Dora, Westonbirt variety, Lælia Jongheana magnifica, a fine selection of Odontoglossums, and other good things.

Sir F. Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), showed a fine group, to which a Silver-gilt Flora Medal was awarded. It contained many varieties of Miltonia vexillaria, among which the varieties

chelseensis and Empress Augusta Victoria were conspicuous, Odontoglossum crispum varieties, O. × amabile, O. nevadense, O. Ehrstedii, O. nebulosum, O. × Wigan-ense, Phalænopsis sumatrana, Dendrobium infundibulum, and others, including the handsome natural hybrid Cymbidium × D'Ansoni, which gained a First-class Certificate, as well as the First Diploma for hybrid Cymbidiums. The flowers are large, and light buff yellow, veined with purple brown on the sepals and petals, and a

Fig. 18. Cymbidium × D'Ansoni.

red-brown median line and markings on the lip, somewhat resembling that seen in C. Lowianum. It is unique at present, and a very striking thing.

J. Bradshaw, Esq., Southgate (gr. Mr. Whitelegge), staged a very fine group, to which a Silver-gilt Flora Medal was awarded. It contained some good Cymbidiums, including C. × Ballianum and C. × Lowio-eburneum, many fine examples of Lycaste Skinneri, Odontoglossum × excellens Lowiæ, and other well-grown Odontoglossums, a good selection of Cattleya Trianæ, including the varieties Rajah, with a purple feather on the petals,

of a very delicate rose-pink tint, some well-bloomed examples of Oncidium concolor, &c.

N. C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Chapman), showed Lælia × De Geestiana Oakwood variety, and a magnificent example of Phaius × Cooksoni, bearing seventeen spikes of its beautiful flowers. The Silver Lindley Medal was deservedly awarded in recognition of such excellent culture.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), showed two splendid spikes of Phalænopsis Aphrodite, taken from a specimen with eighteen leaves, which has been in the collection twenty-three years, Dendrobium lasioglossum, D. amœnum, and two good plants of Masdevallia × igneo-Estradæ, the latter gaining an Award of Merit. It is a very pretty and floriferous hybrid raised in the collection, and is rather variable in colour.

W. A. Bilney, Esq., Fir Grange, Weybridge (gr. Mr. Whitlock), gained an Award of Merit for the handsome Cymbidium Lowianum, Fir Grange var., a large and very richly-coloured form.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cypripedium concolor Westfield var., a large and floriferous form, and Lælio-cattleya × Hopkinsii (L.-c. × Pallas × L. tenebrosa), the latter gaining an Award of Merit. This is a handsome hybrid of intermediate character, having bright rose-purple sepals and petals with darker veins, and the lip ruby-coloured in the centre, with a narrow lavender-coloured margin.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stubbs), showed the beautiful Odontoglossum polyxanthum rosefieldense, O. × Terpsichore (Pescatorei × polyxanthum), O. crispum Queen of the Earth, a handsome thing which is figured at page 137, and the handsomely blotched O. c. Lionel Crawshay.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent Odontoglossum crispum Lucasianum, a prettily-spotted form.

G. F. Moore, Esq., Bourton-on-the-Water (gr. Mr. Page), showed Cypripedium × Bridgei magnificum.

Col. Rogers, D.S.O., Sevenoaks (gr. Mr. Usher), sent a fine example of Dendrobium nobile, for which a Cultural Commendation was awarded.

The Marquis de Wavrin, Château de Rumbeke, Ghent, sent Cattleya Forgetiana, a distinct Brazilian Cattleya, which is described on page 142.

L. G. Sutton, Esq., Reading, showed a form of Dendrobium nobile.

Messrs. Sander and Sons, St. Albans, staged a very fine group, which gained a Silver Flora Medal. It included the handsome Miltonia × Bleuana, Renanthera Imschootiana, Polystachya Leucensis, P. Hartlana, Saccolabium bellinum, several examples of Sarcochilus Hartmanni, a fine

orange, and the lip glowing ruby red, tinted with orange.

things.

var., &c.

flower, very finely fringed.

Mr. H. A. Tracy, Twickenham, showed a good form of Cypripedium × Katherine.

DIPLOMA AWARDS.

THE subjects of the special competition on this occasion were Cymbidium and Masdevallia, species and hybrids, and the awards were as follows :—

CYMBIDIUM SPECIES.—First Diploma to C. Lowianum, Fir Grange var., from W. A. Bilney, Esq. Second Diploma to C. grandiflorum punctatissimum, from Jeremiah Colman, Esq.

CYMBIDIUM HYBRIDS.—First Diploma to C. × I'Ansoni, from Sir Frederick Wigan, Bart. Second Diploma to C. × eburneo-Lowianum, from Sir Trevor Lawrence, Bart.

MASDEVALLIA SPECIES.—First Diploma to Masdevallia Veitchiana grandiflora, from Jeremiah Colman, Esq.

MASDEVALLIA HYBRIDS.—First Diploma to M. × Bocking Hybrid, from Sir Trevor Lawrence, Bart. Second Diploma to M. × igneo-Estradæ, from the same exhibitor.

We regret that an error crept into our report of the last meeting at p. 112. It was a First Diploma that was awarded to Lycaste Skinneri Beauty from the collection of J. Bradshaw, Esq. The colour should have been described as pale pink, with a white lip, having one or two pale pink spots on it.

At the meeting held on April 17th there was again a very fine display, and the awards consisted of five medals, five First-class Certificates, two Awards of Merit, one Cultural Commendation, and one Botanical Certificate.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), staged a very fine group, to which a Silver-gilt Flora Medal was given. It contained several very fine forms of Odontoglossum crispum, among which the heavily-blotched var. F. K. Sander was conspicuous, some good O. × Adrianæ, O. × Humeanum, the rare O. × Duvivierianum, O. Pescatorei, Miltonia Roezlii, Zygopetalum × Perrenoudi, Oncidium concolor, O. leucochilum, the rare Houlletia odoratissima, Cœlogyne speciosa, Epidendrum × Aspasia, Cypripedium Mastersianum, a greenish yellow form of C. × Dauthieri, and a very striking Liparis, called L. tabularis, having a spike of maroon flowers, with a large rounded denticulate lip.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), received a Silver Flora Medal for a choice group, consisting mostly of well-grown Odontoglossums, including some good forms of O. crispum, O. ramosissimum, O. cirrhosum, O. Pescatorei, with good examples of Cymbidium Lowianum, Cypripedium Lowii, and others.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent a small group of choice things, including the beautiful varieties of Odontoglossum Pescatorei called Veitchianum, Schroederianum and melanocentrum, O. × Adrianæ aureum, Cattleya × Memoria Dallemagneæ var. Alexandra, Epidendrum × Cleon (radicans × Pseudepidendrum) and Lælio-cattleya × callistoglossa, Dell var., the latter a particularly fine form which received an Award of Merit.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), exhibited Cypripedium bellatulum citrinum, a light yellow, heavily blotched form, and Brassocattleya × Mrs. Francis Wellesley (C. Lueddemanniana × B. Digbyana), a very large and beautiful form, to which a First-class Certificate was awarded. It is described on page 135.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), received an Award of Merit for Lælio-cattleya × Baroness Schröder var. delicata, a beautiful form, having light rose sepals and petals, and the prettily undulate lip deeper rose, with a large orange-coloured throat. A Cultural Commendation was given to a fine plant of Miltonia vexillaria superba, bearing eight spikes and over fifty large magenta-rose flowers.

H. Whateley, Esq., Kenilworth, received an Award of Merit for Odontoglossum crispum Whateleyæ, a beautiful white flower, regularly and profusely spotted with dark purple.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), received a Botanical Certificate for a plant called Dendrobium shillongense, which is identical with D. lasioglossum, Rchb. f.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), sent Odontoglossum triumphans vars. aureum and latisepalum.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Chapman), sent fine examples of the handsomely blotched Odontoglossum crispum Rossendale and O. c. Frederick, the latter bearing a spike of seventeen flowers, as well as a large seed-capsule on an old spike.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed Odontoglossum Andersonianum var. Raymond Crawshay, a heavily spotted form, and other good things.

F. J. O. Montagu, Esq., Melton Park, Doncaster, sent a good white form of Cattleya Schroederæ, with a rose-pink marking in front of the orange disc of the lip.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a very fine group of hybrids, to which a Silver-gilt Flora Medal was given. Among the more noteworthy plants were the pretty little Odontioda × heatonensis, Lælio-cattleya × Myra, L.-c. × Mercia, some good L.-c. × callistoglossa, L.-c. × Wellsiana nobilior, the fine Brassocattleya × Digbyano-Mossiæ Queen Alexandra, and other Brassavola Digbyana hybrids,

Cypripedium × Jeanette, the richly-coloured Cattleya Trianæ Uplands var., Odontoglossum × Rolfeæ, O. × Ossultoni, and other good things. First-class Certificates were given to each of the two following :—Odontoglossum × amabile John Bradshaw (crispum Calypso × Harryano-crispum) is a very richly-coloured hybrid, having the lower two-thirds of the sepals and petals heavily barred with claret-purple, and the rest white, tinged with purple, the lip being white marked with purple at the base. O. × W. H. Hatcher (× crispo-Harryanum × Pescatorei Charlesworthii) is another beautiful hybrid of excellent shape, having a white ground colour tinged with rose, and heavily blotched and banded with dark purple, the front of the lip being white.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a fine group, containing some good examples of Lælio-cattleya × bletchleyensis, Lælia purpurata, Polystachya bracteosa, Aërides Micholitzii, Maxillaria Sanderiana, Catasetum Lemosii, Dendrobium capillipes, some good Lycaste Skinneri, L. Lawrenceana, Epidendrum Wallisii, Cynorchis × kewensis, Galeandra lacustris, Cypripedium niveum, bellatulum, and × Maudiæ, and Oncidium × illustre, a supposed natural hybrid between O. leucochilum and O. maculatum.

Messrs. Hugh Low & Co., Enfield, also received a Silver Flora Medal for a fine group, containing some profusely flowered examples of Dendrobium Boxallii, a very fine plant of D. Pierardi, D. crassinode Barberianum, Cymbidium Devonianum, Cattleya Schrœderæ, C. intermedia alba, Masdevallia × Pourbaixii, Odontoglossum crispum, and others.

Messrs. James Veitch & Sons, Chelsea, received a First-class Certificate for Lælio-Brasso-Cattleya × Veitchii (Lælia purpurata × Brassocattleya × Digbyano-Mossiæ), a remarkably fine hybrid of perfect shape, with the sepals and petals blush white, and the very broad lip rich purple in front of the yellow throat, becoming paler at the beautifully-fringed margin.

Messrs. James Cypher & Sons, Cheltenham, sent three fine forms of Miltonia vexillaria, differing in colour, and Cattleya Mendelii Duchess of York, a pretty white form, suffused with pink in front of the light yellow disc of the lip.

M. Ch. Vuylsteke, Loochristi, Ghent, sent a small group of choice Odontoglossums, including a fine O. × Lawrenceanum, O. × amabile, O. × percultum, O. × ardentissimum, O. × excellens, and O. crispum spectatum, a finely blotched form.

DIPLOMA AWARDS.

The subjects of the special competition on this occasion were Odontoglossum crispum, Pescatorei, triumphans, and their hybrids, and the awards were as follows :—

O. × CRISPUM (UNSPOTTED).—First Diploma to O. c. Venus, from De B.

Crawshay, Esq. Second Diploma to O. c. Lady Buchan, from the same exhibitor.

O. CRISPUM (SPOTTED).—First Diploma to O. c. Rossendale, from Norman C. Cookson, Esq., and J. Wilson Potter, Esq. Second Diploma to O. c. Jeanette, from J. Wilson Potter, Esq.

O. PESCATOREI.—Second Diploma to O. P. Schrœderianum, from Baron Sir H. Schröder.

O. TRIUMPHANS.—First Diploma to O. triumphans Lionel Crawshay, from De B. Crawshay, Esq.

O. HYBRIDS.—First Diploma to O. × Adrianæ aureum, from Baron Sir H. Schröder.

A series of over two hundred of the Society's paintings of Certificated Odontoglossums was exhibited, forming a very fine display.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on March 22nd last, when there was a rather small display.

Philip Smith, Esq., Haddon House, Ashton-on-Mersey (gr. Mr. Kitchen), staged a good group, chiefly of Dendrobiums, which received a Silver Medal, and an Award of Merit was given to Lælio-cattleya × Cappei, Smith's var.

Dr. E. Roberts, Hale, also gained a Silver Medal for a good group, including some choice forms, one being a seedling of unknown parentage to which an Award of Merit was given.

Messrs. J. W. Moore, Ltd., Bradford, also sent a small group, including Dendrobium × Ainsworthii auriferum, a distinct yellow form, which obtained a First-class Certificate, and Lælio-cattleya × Oricus, which gained an Award of Merit.

Groups were also sent by Messrs. A. J. Keeling & Sons, Bradford, and Mr. S. Allen, Sale.

AT the meeting held on April 5th there was a fair display of Orchids, and the awards consisted of five Medals and six Certificates of various kinds.

R. le Doux, Esq., West Derby (gr. Mr. Davenport), staged a fine group of about twenty specimen plants, including Odontoglossums, Dendrobiums, Oncidiums, and Lycastes, to which a Silver-gilt Medal was given. The most remarkable plant was a well-grown Dendrobium Brymerianum, full of bloom, to which a Cultural Certificate was given.

Philip Smith, Esq., Ashton-on-Mersey (gr. Mr. Kitchen), also sent a good group of Dendrobiums and other Orchids, to which a Silver Medal was given.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), sent four good

Odontoglossums, gaining Awards of Merit for O. × ardentissimum var. Princess Ena and O. crispum Starlight Gratrix's var.

E. Mitchell, Esq., received an Award of Merit for Dendrobium × Cybele Mitchell's var.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), exhibited Lælia × purpurato-Digbyana Harefield Hall var.

Messrs. James Cypher & Son, Cheltenham, sent a very fine group, to which a Silver Medal was given, together with an Award of Merit for Cattleya Trianæ var. Juno.

Messrs. J. W. Moore, Ltd., Bradford, were awarded a Bronze Medal for an interesting group, containing some good Odontoglossums, and a First-class Certificate for Cypripedium × Bridgesii magnificum, a very fine form.

Messrs. A. J. Keeling & Sons, Bradford, were accorded a Vote of Thanks for a small group of miscellaneous Orchids.

Messrs. Hugh Low & Co., Enfield, sent Odontoglossum crispum Jeanette and O. c. xanthotes Low's var.

DENDROBIUM LASIOGLOSSUM.

AT the R.H.S. meeting held on April 3rd last, an Orchid was exhibited from the collection of Sir Trevor Lawrence, Bart., under the name of Dendrobium shillongense. On April 17th it appeared again, and was awarded a Botanical Certificate. The *Gardeners' Chronicle* for April 21st (p. 254) speaks of the name as "verified at Kew," but this has arisen from some mistake, for the plant was immediately recognised as the long-lost Dendrobium lasioglossum, Rchb. f. (*Gard. Chron.*, 1868, p. 682). The species was originally discovered in the forests of Burma by Col. Benson, who sent plants to Messrs. Veitch and to the Royal Gardens, Kew. It flowered in these establishments, and in the collection of Wentworth Buller, Esq., shortly afterwards, and was figured in the *Botanical Magazine* (t. 5825). It is an ally of D. Ruckeri, Lindl., then thought to have come from the Philippines, but now known to be a native of the Himalayas. The flowers are borne in fascicles of two or three, white, streaked with light purple on the side lobes of the lip, while the crest is yellow and very hairy, in allusion to which the specific name was given. Mr. Day made a painting on March 26th, 1869 (*Orch. Draw.*, xv. t. 11), recording that he purchased the plant at a sale of Moulmein Orchids, at Stevens' Rooms, on March 25th, 1869. Since that period very little has been heard about it, and its re-appearance is certainly interesting. Among cultivated species it is most comparable with D. luteolum, Batem., which also comes from Burma, and belongs to the same group.

R. A. R.

CYMBIDIUM HUTTONI.

THE annexed figure represents the remarkable Cymbidium Huttoni, Hook. f., and is reproduced from a photograph, by Mr. G. I'Anson, of a plant which flowered in the establishment of Messrs. Charlesworth & Co., Heaton, Bradford, and received a First-class Certificate from the Royal

Fig. 19. CYMBIDIUM HUTTONI.

Horticultural Society in July last. The history of the species has already been given (*O.R.*, viii. p. 232), and we need only repeat that it was originally introduced from Java, by Hutton, and flowered in the establishment of Messrs. James Veitch & Sons in June, 1867, when it was figured in the *Botanical Magazine* (t. 5676). Soon afterwards it appears to have been lost

sight of, but in 1900 a plant flowered at Kew, and since then it has flowered in other collections. It is allied to C. Devonianum, Paxt., though very distinct in most respects. The shape of the flowers is well shown in the figure, and their colour is yellowish green, densely spotted with blackish brown. It is also a native of Sumatra, for Curtis sent a dried specimen to Messrs. Veitch, and the habitat has since been confirmed by Micholitz, who obtained it in Central Sumatra, when collecting there recently for Messrs. Sander & Sons. The pendulous racemes are from six to twelve inches long, and bear from about eight to sixteen flowers. R. A. R.

FUNGUS CO-OPERATION IN ORCHID ROOTS.

MR. J. M. BLACK in his Calendar of Operations for April (p. 117) draws attention to this interesting subject, and makes many feasible remarks with regard to inoculation.

In the *Comptes Rendus* for March 28, 1904, M. N. Bernard gives his experience in isolating, by pure cultures, an endophytic fungus capable of exciting germination in Orchid seeds, and a short account of this afterwards appeared in the *Gardeners' Chronicle* of July 9, 1904, and also in the issue of April 21, 1906, with reference to the same observations, which have been reprinted in the new publication, *Orchis*.

I have noticed in a pan of Odontoglossum seed that all the germinating seeds were connected by a fungus thread, and that under a high power microscope no fungus was visible on or near seeds which showed no sign of germination. It may be that the fungus has powers of growth or existence only when in contact with assimilated matter or active life, and therefore the inactive or unfertile seeds offer no attraction.

But M. Bernard states that he has had seeds aseptically sown which did not show signs of germination until he had inoculated them with the hyphomycete in question. Is this fungus then really the cause of starting germination, or is it only a necessary help directly afterwards in affording nourishment to the small seedling by symbiotic means? Many of us know how easy it is to get seed to swell and become green, but it never advances beyond this first stage. Is this because the fungus is absent?

Professor Henslow, in his lecture of March 20th, stated that "the fungus is at first antagonistic to the advance of germination, but that afterwards the germinating seed falls upon it and devours it." Probably with this extra nourishment the seedling is enabled to make rapid headway until roots are formed and it leads a separate life. A striking analogy is noticed between this and the Fission Fungi, or Bacteria, in connection with the leguminous plants, for these at first live on the host, and, while so doing, store up a quantity of nitrogenous food in the root tubercles, but the plant

afterwards more than recuperates its strength by turning round and devouring this.

Much research work has been done in the U.S.A. Department of Agriculture, and cultures of Nitrosomona radicola have been sent out possessing larger powers of attracting the atmospheric nitrogen than former ones. There seems, however, to be as many kinds of this bacteria as there are species of leguminosæ, and that each one only has the power of symbiosis when in contact with the proper host: thus cultures made from roots of clover tubercles do not have any effect at first on sweet peas, but that after a certain number of generations have been bred when in contact with them, they gradually assume their former power of nitrification.

Orchid raising was, I believe, extremely difficult many years ago, but now the majority of growers find no difficulty in raising Cattleyas, Dendrobes, &c. Can the same be said with Odontoglossums? We may yet have to tame the fungus to work with this species. Some have already advanced a long way in the right direction, and these successful men say, "Fungus or no fungus, we do not mind, for here are the seedlings growing like the proverbial mustard and cress."

It would be interesting to hear the opinions and experiences of others with regard to this subject.

GURNEY WILSON.

"Glenthorne," Hayward's Heath.

PROPAGATION OF PHALÆNOPSIS FROM ROOTS.

SOME time ago I wrote to you about some Phalænopsis Stuartiana which I have raised from roots. It may interest you to know that one of those plants is now in bloom, bearing three flowers; a fourth bud turned yellow before expanding. This beats raising Orchids from seed, as the plant in question is only one year old, has four leaves, the longest measuring over three inches, and the flowers just as large as those on the mother plant (this latter had a spike of forty flowers). I have also succeeded in raising two plants of P. Schilleriana from roots, but they do not reproduce themselves quite as freely as P. Stuartiana. However, I got three nice plants of P. Schilleriana, which formed last summer on a "would-be" flower-spike. Two of these are now in 4-inch pans, and have two leaves and two roots each; and, strange to say, both plants threw out two flower-spikes, and after these had been rubbed off, a third spike started on each, which was also rubbed off. Since then the plants have rested, but the two roots keep on growing and supporting the plants, and up to now they have not made any more roots. Both came off the same plant, which has three strong leads and four flower-spikes at present.

Now for a few words about the way I have raised these plants. In November, 1904, I received an importation of over 600 Phalænopsis, and on five P. Stuartianas among them I noticed a few small plants growing on the roots. All were semi-established on sticks of wood, and in due time were taken off and put in baskets. Before I could pot the Stuartianas all the little plants had damped off and disappeared, but, as some of the roots had been broken and severed from the plants, the idea struck me to pot them too and see if they would break. I then put a thin layer of Osmunda fibre over the crocks and charcoal in a basket, and on this the roots were laid and securely fastened down with copper wire. A few roots of P. Schilleriana were put down with them for the sake of experiment. The basket was then hung up amongst the rest of the Phalænopsis, and treated in the same way as the old plants, being dipped whenever the fernroot was dry, which was about twice a week. This was during the first week in February of last year, and in a few weeks some plants appeared on the roots—some on top, some on the bottom. Some roots started at three and four different places. About twenty-five plants were thus produced during the summer, eighteen of which are alive now, the remainder having damped off after potting, this being done too late in the season for some of them.

M. J. POPE.

Naugatuck, Conn., U.S.A.

ORCHIDS IN SEASON.

SEVERAL very beautiful Orchids are sent from the collection of John Leemann, Esq., West Bank House, Heaton Mersey, by Mr. Smith. Lælio-cattleya × Frederick Boyle var. Kerchoveæ is a most beautiful albino, which gained a First-class Certificate at Manchester on April 26th. It was raised from a white form of Lælia anceps crossed with Cattleya Trianæ alba. It is most like the former in shape, with the lip and petals enlarged, and the flower having an expanse of six inches. The colour is white, with a very large bright yellow disc to the lip, and at the base a light maroon blotch, as long as the column and about twice as broad. L.-c. × Hyeana (L. purpurata × C. Lawrenceana) has light rose sepals and petals, and an intense purple-crimson lip, with a deep yellow throat and numerous maroon lines on the disc. It is most like the Lælia in shape, and very beautiful. The rest are Odontoglossums. O. crispum Queen of Spain is a large, flat, pure white form, rather regularly blotched with deep red-brown on all the segments. O. crispum Queen Victoria and O. c. Mars are two handsomely blotched forms. There are also, a dark form of O. luteopurpureum, O. Hallii Leemann's var., a very dark and heavily blotched form, two fine forms of O. × Adrianæ, one very copiously blotched with red-brown,

and the other having the crispum size and acuminate segments, combined with the Adrianæ shape and markings. The other is a light form of O. × W. H. Hatcher (× crispo-Harryanum × Pescatorei Charlesworthii), having light yellow flowers, slightly suffused and copiously blotched with purple on all the segments, the lip being broadly pandurate, with some of the Harryanum characters in the crest. They form a very beautiful series.

A remarkable form of Odontoglossum crispum is sent from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, by Mr. Rogers, in which the dorsal sepal is as broad, round, and as much fringed as the petals. Mr. Rogers remarks that it was precisely similar last year, when it flowered for the first time. A dark form of O. triumphans is also sent, which flowered out of an importation of O. crispum, evidently from the district which produces the wild forms of O. × loochristiense.

Cymbidium × Lowgrinum, raised in the collection of R. I. Measures, Esq., of Camberwell, decidedly improves as it gains strength, for we have now received a spike bearing seven flowers. Mr. Smith remarks that the plants get stronger each year, and the largest is now in a 24-sized pot. Two plants this year produced a couple of spikes each.

A particularly fine form of Brassolælia × Veitchii (Lælia purpurata ♀ × Brassavola Digbyana ♂) is sent by M. F. Denis, Balaruc les Bains, Hérault, France. The lip is very large, and bright rosy purple round the light yellow disc. M. Denis remarks that the flower measured 26 centimètres (over 10 inches) from tip to tip of the sepals when at its best. He has a Brassolælia × Helen still larger, measuring 27 centimètres, and he considers these measurements exceptional.

NOTICES OF BOOKS.

Orchid Hybrids. Messrs. Sander & Sons, St. Albans. 8vo. pp. 125. Messrs. Sander & Sons have re-issued the List of Orchid Hybrids, as published in their *Orchid Guide*, incorporating the Addenda, and bringing the work up to date. The information is given in triplicate; first under the name of the hybrid, then under the seed parent, and lastly under the pollen parent, the lists in each case being alphabetical. The lists consist of the names and parentage only, without reference to dates, raisers, or publication, and unfortunately a good many of the hybrids have received several names, and there is no means of finding out which is the original one. It will be useful as a means of finding out which species have been intercrossed together, as well as for tracing the parentage of any given hybrid.

Hortus Veitchii. By James H. Veitch.—Messrs. James Veitch & Sons, Chelsea. 4to. pp. 542, with fifty illustrations and an Index.

The purpose of this sumptuous volume, which is inscribed as "For private circulation only," is to give "A History of the rise and progress of the Nurseries of Messrs. James Veitch & Sons, together with an accourt of the Botanical Collections and Hybridists employed by them, and a list of the most remarkable of their introductions." It is a record of continuous work for over three-quarters of a century in the field of Horticulture by one family, of which the firm may justly be proud. With the Orchidological part of the work we are alone concerned here, and it is no inconsiderable item, for a sketch of the principal Orchid species introduced by the firm occupies nearly fifty pages, while sixty others are devoted to an account of the principal hybrids raised by them. These contain short descriptive notes, with references. The notes of collectors and hybridists employed are also most interesting. The photographic illustrations are excellent, and contain numerous Orchids. It is a book to be treasured by all those who are fortunate enough to possess it.

Orchis. Monatschrift der Deutchen Gesellschaft fur Orchideenkunde. Herausgegeben von Prof. Dr. Udo Dammer.

Our German friends propose to issue a monthly work devoted to Orchids bearing the above title, and the first issue has just reached us. It is about the size of the *Reichenbachia*, and is chiefly in German, with an article in French entitled "Les Champignons des Orchidées, leur rôle et leur utilisation," by M. Noel Bernard, and Latin diagnoses of three novelties by R. Schlechter. The Introduction, too, is accompanied by a French and English translation. Among other articles we note Des Orchideen des Kilimandscharo, by G. Volkens, and Seltenere Orchideen aus meinem Sammlung, by Max Freiherr von Furstenberg, a Calendar of Operations, and other cultural matters. There is a coloured plate of Cattleya labiata Trianæ Backhouseana, and a figure of Coryanthes maculata. The price is 20s. per annum. We wish our new contemporary success.

NOTES.

Two meetings of the R. H. S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during May, on the 1st and 15th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. The subjects of the special competitions for these dates are:—May 1st, Cypripedium bellatulum, concolor, niveum and Godefroyæ, with their hybrids, and Odontoglossum crispum, Pescatorei and luteo-purpureum, with their hybrids. May 15th, Lælia purpurata, Lælio-cattleya ×

Schilleriana and × elegans, also Miltonia vexillaria and Epidendrum radicans, in each case with their hybrids.

The Great Annual Flower Show will be held in the Inner Temple Gardens, Thames Embankment, on May 29th, 30th, and 31st. The Orchid Committee meets at 11 a.m. on the first day. Cups and Medals will be awarded, as usual, according to merit.

The next meeting of the Manchester and North of England Orchid Society will be held at the Coal Exchange, Manchester, on May 10th. The Committee meets at noon and the exhibits are open to inspection from 1 to 3 p.m. The Annual General Meeting will be held on the same day.

Flowers of Paphiopedilum × Robbinsii and var. superbum are sent from the collection of J. E. Vanner, Esq., Camden Wood, Chislehurst, by Mr. Robbins. The latter is a fine and very richly coloured form, closely dotted with dark brown on the upper halves of the petals and base of the dorsal sepal, the latter passing into purple above, terminating in a broad, white margin. The parentage was P. × Godseffianum × Calypso. A very fine dark form of P. villosum called Pollett's var. is also sent.

A four-flowered inflorescence of a pretty hybrid Dendrobium is sent from the collection of W. G. Moore, Esq., Pollokshields, Glasgow. It was purchased three years ago as a cross between D. nobile and D. Farmeri. Mr. Moore remarks that last year the plant made three very strong bulbs of sixteen to eighteen inches long, having the top of the bulbs extra stout, and the necks quite thin, and asks our opinion on the matter. We should like to know more of the exact circumstances, for the short axillary inflorescence is quite unlike that of D. Farmeri, though the description of the bulbs agrees better with what might have been expected. The flowers are more comparable with D. × Ellisii, being yellowish white tipped with light purple, and there is a slight maroon marking on the hairy yellow disc. The colour shows a wide departure from D. nobile. We should like to know the experience of others who may have attempted this cross. It may be possible to clear the matter up later on.

Several interesting flowers are sent from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, by Mr. Smith. They include forms of Paphiopedilum × villosum, the beautiful P. Lawrenceanum Hyeanum, with the hybrids P. × Youngianum, × Smithii, × barbato-Lawrenceanum, × Vidor, × Lachmee, and × Zeus. The four latter were all raised in the collection. A good flower of the beautiful Phragmopedilum × Schrœderæ is also sent.

ORCHID PORTRAITS.

BRASSOCATTLEYA × MRS. FRANCIS WELLESLEY.—*Gard. Mag.*, 1906, pp. 268, 269, with fig.

CYPRIPEDIUM TIBETICUM, King.—*Bot. Mag.*, t. 8070.

DENDROBIUM DEVONIANUM.—*Journ. Hort.*, 1906, i. p. 317, with fig.

DENDROBIUM NOBILE.—*Gard. World*, 313, 321, with fig.

DENDROBIUM × WIGANIANUM, GATTON PARK VAR.—*Gard. Chron.*, 1906, i. p. 219, fig. 85.

DISA GRANDIFLORA.—*Journ. Hort.*, 1906, i. p. 339, with fig.

LÆLIO-CATTLEYA × HOPKINSI.—*Journ. Hort.*, 1906, i. p. 261, with fig.

LÆLIO-CATTLEYA × THE BARON.—*Gard. Mag.*, 1906, pp. 238, 239, with fig.

LISSOCHILUS HORSFALLII.—*Garden*, 1906, i. p. 235, with fig.

LYCASTE SKINNERI.—*Gard. World*, 1906, p. 331, with fig.

MACODES JAVANICA.—*Gard. Chron.*, 1906, i. p. 216, with suppl. plate.

ODONTOGLOSSUM × WILCKEANUM PITTIÆ.—*Gard. Mag.*, 1906, p. 224, with fig.

PHALÆNOPSIS LUEDDEMANNIANA (propagated from old flower spikes).—*Gard. Chron.*, 1906, i. p. 259, fig. 107.

SOPHROCATTLEYA × WARNHAMENSIS VAR. CERISE.—*Journ. Hort.*, 1906, i. p. 295, with fig.

CORRESPONDENCE.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily.)

J.B. 1, Eulophia gracilis, Lindl. 2, Miltonia Reichenheimii, Rolfe. 3, Catasetum trifidum, Hook. 4, Oncidium Batemanianum, Parment. 5, Oncidium maculatum, Lindl.

G.B.L. Oncidium insculptum, Rchb.f. Several curious species occasionally flower out of importations of O. macranthum.

E.A. Masdevallia triangularis.

A.B. The Phalænopsis leaf shows some mechanical injury, possibly through drip. No fungus is present. As only one plant out of twenty is affected moving the plant might be an effectual remedy. Glad to know the REVIEW is so helpful.

H.A., J.L., W.C.P., F.C., and several others, unavoidably held over till next issue.

G.G. A prettily spotted form of O. crispum, which should be good when established.

M.J.P We have not been able to make out the microscopic spider found on your Phalænopsis. Should the mischief continue please forward actual specimens. The drawing of it and the red spider, though clearly showing the marked differences between the two is not sufficient to enable us to determine the insect.

Photographs received, with thanks, De B. C.

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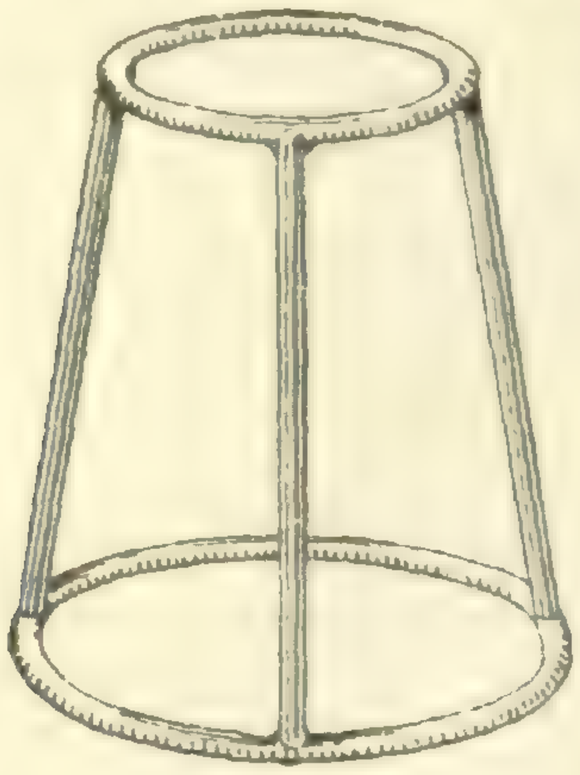

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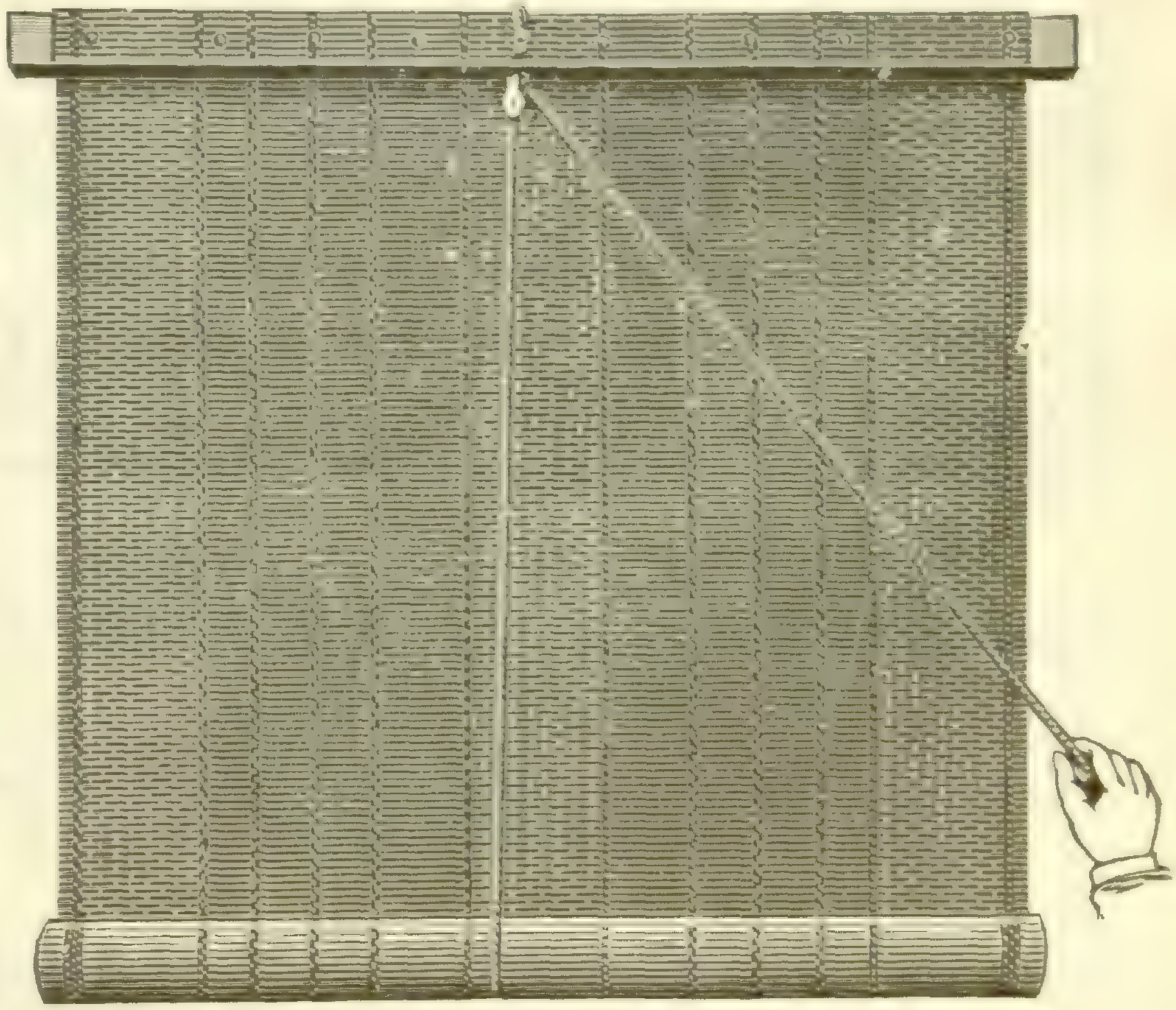

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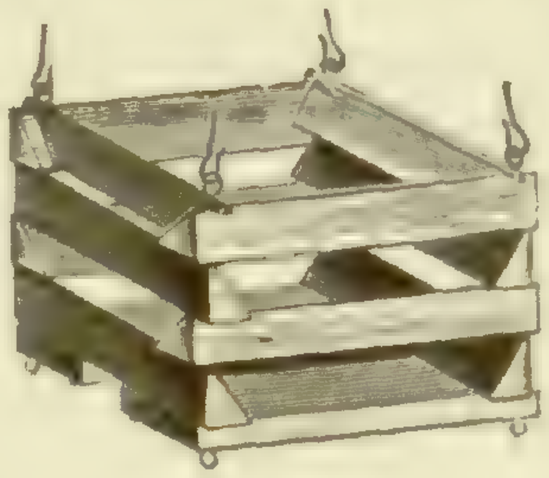

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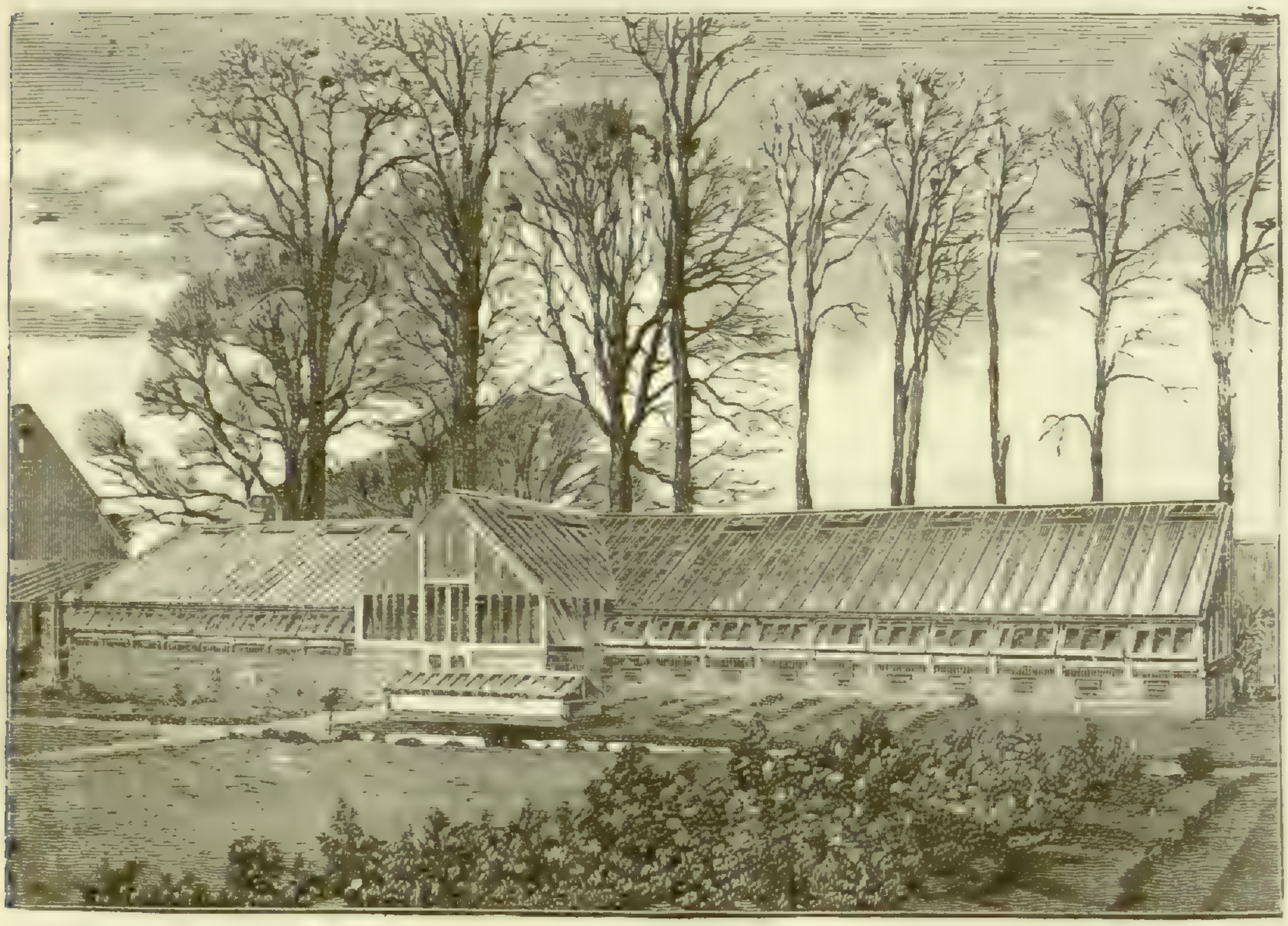

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VOL. XIV.] JUNE, 1906. [No. 162.

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An Illustrated Monthly Journal of Orchidology.

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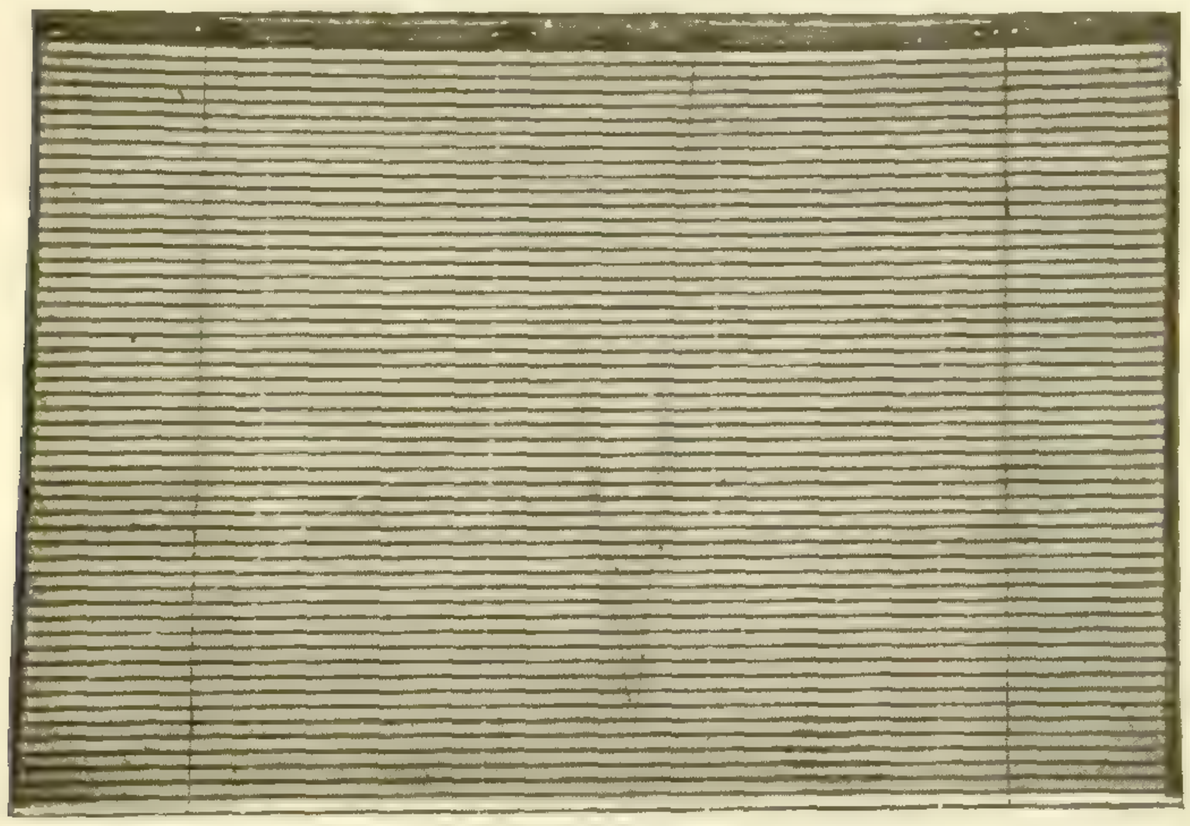

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THE ORCHID REVIEW.

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LAW NOTES.

LEEMANN V. LINDEN & Co.—The *Journal des Tribunaux* for April 12th reports the judgment in this case, of which an outline was given at page 61 of our last volume, the essential point being that five Odontoglossum crispums were purchased for £1,200, on the strength of coloured drawings supplied by the defendant, but on flowering were, according to the plaintiff, very inferior.

At the preliminary hearing (on February 28th, 1905) it was established that when the plaintiff complained that the flowers of three of the plants in question, which had flowered in his houses, did not agree with the reproductions which had served as the basis of the sale, the defendants did not contest the identity of these plants with those delivered by them. At this hearing the following facts, which are not disputed, were also ascertained :—

On December 9th, 1903, the plaintiff's wife, in his absence, wrote to M. Linden saying that the variety "Constellatum" had flowered, but that the painting was completely different, representing a flower both larger and with more colour.

On December 11th, 1903, the defendant replied verbally that this was not astonishing, considering the time of year in which the flowering took place, the days being the shortest and darkest in the year.

On December 15th, 1903, the defendant, having received a flower which had been sent to him, declared that it differed from the flower obtained when the plants last flowered with him, but reiterated that this was not surprising, considering the time of year at which it flowered, he himself having had many similar cases.

On April 19th, 1904, the plaintiff notified the defendants that the varieties "Calos" and "Funambulum" had flowered, and were also not true.

On April 20th the defendants wrote protesting that something very obscure had taken place, which required clearing up, and that it was necessary to investigate why the plants had not flowered true in the plaintiff's

houses, as they had in those of the defendants, while they did not say that they doubted the identity of the plants with those supplied by them.

On April 21st the defendants proposed, by way of amicable compromise, to take back the plants and replace them by other plants of fine varieties in flower, to be chosen by the plaintiff, and to be of the same value as those originally purchased, the plants to be priced according to the average market rates in England for such varieties.

This proposal constitutes an implicit acknowledgment by the defendants of the identity of the plants with those supplied by them, for it is certain that the defendants would not have offered to take back worthless plants which they had not supplied and to furnish in their place other plants to the same value as those originally sent.

On April 25th, having received from the plaintiff two flowers, produced by the plants called "Calos" and "Funambulum," the defendants stated that the differences in the shape, colour, and spots were due to the culture to which they had been subjected with Mr. Leemann, while still saying that they wished to settle the matter in an amicable manner.

Lastly, on May 10th, they again asked the plaintiff how it was that the plants sold to him were now no longer true, but they did not expressly refuse to admit the identity of the plants with those originally supplied, and it was only after the commencement of the action that they did so refuse.

The experts who were interrogated upon the various technical points were M. Jules Hye, of Ghent, M. De Bièvre, gardener to the King of the Belgians, and M. Stepman, nurseryman, Molenbeck-St.-Jean.

The first witness of the direct hearing, the plaintiff's head gardener, stated that the plants which had produced the flowers sent by the plaintiff to the defendants were certainly those supplied by the latter. He declared that he would be perfectly able to identify the plants, even if their labels were removed, and they were mixed with others. He also stated that Mr. Thompson had shown him recently a plant of Odontoglossum crispum called "Calos," which he had had a long time.

The second witness declared that it was impossible that the plants in question should not be the same, owing to the scrupulous attention which was given to them, with regard to their entry in a register, ticketing, and numbering. No mistake was possible, as all plants were dealt with on arrival. He also stated that he had seen the plant of Odontoglossum crispum Calos in Mr. Thompson's collection, and that it was he himself who first apprised the plaintiff of the existence of a "Calos" in Mr. Thompson's collection.

The fourth witness, on the contrary, affirmed that both Mr. Thompson and his gardener had told him that the plant of Odontoglossum crispum Calos, which had been sold to the former by M. Linden, was dead.

Both Mr. Thompson and his gardener, however, had stated on oath that the plant of Calos, purchased from M. Linden in 1896, was still living, although it had not flowered since its delivery.

The defendants, in the course of the arrangements for the sale, verbally stated that they placed the varieties "Vinicius," "Constellatum," and "Aramis" in the same class as "Luciani," "Lindeni," and "Quo Vadis," that "Vinicius" greatly resembled the variety "Quo Vadis," the only difference being in the shape of the spots, that the varieties "Calos" and "Funambulum" were of the first order, and that the two latter were unique plants, no other examples existing in cultivation. The experts upon the various questions submitted to them expressly declared as follows:—

No culture could succeed in making the four Orchids which have produced the flowers obtained by the plaintiff give other flowers identical with the water-colour paintings and plates sent by the defendant for the purpose of concluding the transaction.

The flowers which have been produced and which are possible to be produced by the varieties "Funambulum," "Constellatum," "Calos," and "Vinicius" could never be placed in the same class as "Luciani," "Lindeni," and "Quo Vadis."

The varieties of crispum in dispute can never be classed as varieties of Odontoglossum crispum of the first order.

An Odontoglossum crispum has certain fixed characters, features of identity, which do not disappear, even under the worst culture.

In consequence of this fact, an expert, on the examination of the flower produced by a remarkable variety well known to him, can say whether or no this flower has been produced by the Orchid in question, no matter how bad the cultivation has been.

The fact that, on the receipt of the flower of "Constellatum," the defendants did not pretend that they could not recognise in this flower the special characters of the variety sold by them, constituted an acknowledgment that the plant which had produced that flower was the same that they had delivered.

The Tribunal therefore gave judgment on the following points:—

The charge made against the experts of irregular proceedings in connection with their report appeared unfounded.

The Tribunal having heard both parties, could not call other experts if they considered that the present ones had sufficiently enlightened them.

It was necessary for the Tribunal to call these experts, and to follow their report in such a special case.

The capacity, integrity, and disinterestedness of the experts could not be questioned, one of them having been described by the defendants on April 20th, 1904, as a distinguished connoisseur.

It appeared that there had been a mistake in the substance of the thing sold, the identity of which had been clearly established, and that in consequence the sale ought to be annulled, according to the terms of Article 1,118 of the Civil Code.

That in regard to the variety "Calos," which M. Linden declared on the 11th of June, 1904, to be a unique plant, no other example existing in cultivation, it was certain that, even if M. Linden thought this to be the case, it was not so in reality.

That since the rarity of an Orchid is one of the principal things which makes it valuable to collectors, it is necessary for a plant to have great value, that it should be a unique one.

There remained only the evidence of the fourth witness against that of Mr. Thompson and his gardener, who, considering the state of the foliage of the "Calos" at one time, might have at that time thought that it was dead, although the second witness says that he does not remember that this idea was ever held.

It mattered little, with regard to the result of the present litigation whether M. Linden thought, or had any right to think, that the "Calos" sold years previously to Mr. Thompson was dead, it mattered little whether the vendor was of bad faith or not, it was only necessary that there was a mistake in the substance of the thing sold. This mistake had been caused by the statements, at least imprudent, of the vendor.

An error in the matter of one only of the five plants would justify the annulment of the sale, the five being considered as indivisable as regards the total sum paid.

The Tribunal, therefore, on these grounds, declared null on the cause of error the sale of the five plants of Orchids, and ordered the defendants to pay to the plaintiff, first the sum of 30,000 francs (£1,200), being restitution of the original price paid; secondly, the sum of 3,000 francs (£120) as damages and interest, the plaintiff to return the disputed plants after the defendants have paid the amounts ordered by the present judgment.

The Tribunal decreed M. Lucien Linden (since he was merely a sleeping partner in the firm, and could not be condemned jointly with the Société Linden et Cie.) personally responsible in his own name for the payment of these sums, judgment being entered to that effect.

INDIVIDUALISM AMONG ORCHIDS.

WE have lately returned from a motor tour through parts of England—a tour made chiefly with the object of visiting some of the fine collections of Orchids so often heard of, and seen represented at the meetings of the Royal Horticultural Society and the Manchester Orchid Society.

It has been a very great pleasure, and most instructive to study the differing ways of attaining the same object. In some places the great interest lay in the hybridizing that was made the chief feature; in another it was the effort to perfect the housing accommodation, and give the best atmospheric conditions, so as to get the plants to grow as well as possible, and thus improve the shape and colour of their flowers; in others it was the duplication of fine varieties by division, &c.—the common ground being a desire to fill the houses with as fine varieties as possible, and a boundless enthusiasm in the work.

We saw some splendid things in flower, and also thoroughly enjoyed the inspection of bulbs and leaves, and the histories attached to some of the plants. Everyone showed us the greatest kindness, and took an amount of trouble to make our visit interesting.

I have not asked these gentlemen's permission to write of their Orchids; but I feel I would like to share the pleasure of these visits with others who are not able to go and see for themselves.

We went first to see Baron Schroder's collection—a collection that has taken a great many years to form, some of the plants having been there considerably over twenty years. Their owner has rejected everything but the best, with the natural result that a magnificent collection has its home there. Every plant is distinguished by some special beauty or value, and many are quite unique; and amongst these latter are some of the finest Odontoglossum crispums known, such as apiatum, Veitchianum, Sanderianum, and Baroness Schröder. Some beautiful things were in bud and flower; but it was a pleasure even to read the labels of those that were not, and to think of the beauty they represented. Some of the finest grown Calanthes I have ever seen were here in flower—magnificent spikes, quite a little forest of them; there was also open a wonderful spike of Lælia anceps Schrœderiana; and we noticed how much better it looked here than when shown at the R.H.S. meeting. The want of background there always seems to detract greatly from the beauty of the individual plants shown upon the Committee's table.

At Mr. Cookson's we saw a number of very fine things in flower; one Odontoglossum house was a real feast; fine varieties, and fine spikes, one plant carrying seventeen flowers and a pod from last year as well. There was a very rich O. × ardentissimum open; but I think the best of all were two plants of O. crispum xanthotes; "Cooksoniæ" and "Ardarroch variety," good spikes of each, and in their gracefulness, beauty of shape, and purity of colouring they made a lovely picture. Standing out from the rich things with which they were surrounded, they seemed to attract the eye from every part of the house. Disbudding does not find favour here, but their owner seems to have a wonderful knack of multiplying his

plants by division; the knife has been manipulated most successfully to the great extension of the collection.

Mr. Cookson has done a good deal of hybridizing and seedling raising, and has brought a scientific mind to his aid in the work, doing everything with a special object, taking the best production from one batch of seedlings, and going on again with that, thus gradually working his desire in richness of colour and beauty of form. He showed us part of his work's progress, recorded step by step in drawing, photo, &c., and gave us hints on the storing of pollen, making our visit a most interesting one.

At Mr. Leemann's, one great aim is evidently the perfecting of the ventilating, heating and shading arrangements, and no trouble or expense is spared to this end. Here we found the system followed is not buying imported plants and weeding out, but buying only good things in flower, or duplicate plants of well-known good things. Every plant is something special (anyway among the Odontoglossums), and the paintings testify to the richness of the collection. Here, as elsewhere, the standard gets higher year by year, and as more room is wanted some of the older things are turned out and given away, and so the collection grows always better.

We saw a very great number of paintings, and of a good many a second has been done of another season's flowering to show the improvement in variety, and in some instances this was most marked. Mr. Leemann is deeply interested in every detail, and spends a great deal of time with his plants. His potting-house arrangements are very good, and most convenient; they run along one side of a corridor, and the Orchid houses all run from the other side, so that the plants never need to go outside, but just across this covered way to be attended to. Here, too, he has his paintings stored, in large special cupboards with sliding doors, so everything is handy and very convenient.

EMILY THWAITES.

(To be continued.)

OBITUARY.

JAMES ENGLEHART VANNER.—It is with much regret that we have to announce the death of Mr. J. E. Vanner, at his residence, Camden Wood, Chislehurst, on May 12th last, in his 75th year, he having survived his wife (after whom Cypripedium × Vanneræ was named) eleven years, and his brother, William Vanner, six years. His garden—of which he was very fond—is beautifully situated on a hill overlooking the park and mansion of Camden House, the residence of the late Emperor of the French and Empress Eugenie. Among other features of the garden is the Orchid collection, left him by his brother William. Its formation began in 1873, and there is still an Odontoglossum crispum bought at Veitch's in 1875, and many other varieties that have been there a quarter of a century.

The collection is not large, consisting of an East Indian, a Cattleya, and a Cool house. Mr. J. E. Vanner was not exactly an Orchid connoisseur, as was his brother—he saw beauty in the commoner and familiar kinds, and parted with some of the rarer varieties that once were there. Among many hybrids raised in the collection we may mention Dendrobium × Vannerianum (moniliforme × Falconeri), described by the late Prof. Reichenbach, in 1887, and various Cypripedes, as C. × cardinale Vanner's var., C. × pulchellum, C. × Vanneræ, and C. × Robbinsii (named after Mr. W. H. Robbins, who has had charge of the collection for the last twenty-two years), and a host of unflowered Cypripedes and Cattleyas. Here may be found a plant—the only one we know of—of the very rare and handsome Miltonia Karwinskii, whose history was given at pp. 298, 299 of our twelfth volume. The collection will probably be disposed of shortly. Mr. Vanner was a director of the City and Midland Bank, and will be remembered for many philanthropic deeds, among which it is pleasant to mention that each of his garden employees has been generously remembered in his will.

ODONTOGLOSSUM HABITATS.

WITH reference to the note on Hybrid Odontoglossums at page 127, I may say that I have never collected or seen O. luteopurpureum growing in the new district where the large blotched forms of O. crispum come from, but the statement made by Mr. Armstrong would suggest its presence there, for I am perfectly certain that he has had no plants from me coming from another district.

On the other hand I think it may interest readers of the *Orchid Review* to know that early this spring I flowered among a batch of semi-established O. crispum, a good form of O. Pescatorei. I must add that I never collected or received importations of O. Pescatorei, and consequently it could not get mixed in by chance. I suppose it is the first time that this species has been found among O. crispum.

FL. CLAES.

This note is particularly interesting in view of others which have appeared. (See *O. R.* vii. p. 167, and x. p. 210). We hope to see the matter cleared up.—ED.]

Indian Gardening (p. 316) alludes to our article on Paphiopedilum hirsutissimum (p. 103), and remarks:—"It would appear that C. hirsutissimum is really the true C. Fairrieanum! at any rate that is the impression left on our mind." We hasten to say that such is not the case. The history should of course be read in connection with that of the true C. Fairrieanum, Lindl., previously given, and the wonder is that this original appearance of C. hirsutissimum should not have been previously recorded, especially in view of the facts given. How there came to be an "Adam's

Fairrieanum" as well as one of Lindley we cannot say, but that name was clearly added after the painting was made. But when and how did Mr. Fairrie acquire C. hirsutissimum?

PAPHIOPEDILUM BELLATULUM.

THE *Journal of Horticulture*, to which we are indebted for the loan of the accompanying block, remarks (p. 427) that this fine specimen is seldom seen growing luxuriantly, yet in the collection of Francis Wellesley, Esq., at Westfield, Woking, the plants grow with great freedom, and in the group illustrated several are carrying two flowers on one spike, and the Cultural Commendation given by the Orchid Committee on May 1 was

Fig. 20. PAPHIOPEDILUM BELLATULUM.

well deserved. They are grown suspended in the Stove Orchid house, and are potted in a mixture of loam, sand, and small pieces of crocks, with pieces of soft brick, about the size of walnuts, for drainage, and also worked in here and there through the compost. Ordinary pots are used, and much water is afforded at all seasons. The hybrids obtained from this species also grow very freely; in fact all the Cypripediums are in most robust health, and reflect great credit on Mr. Hopkins, the able grower in charge.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on May 1st, when a very fine display of Orchids was seen.

Leopold de Rothschild, Esq., Gunnersbury Park, Acton (gr. Mr. Reynolds), was awarded a Silver-gilt Flora Medal for a fine group of Vanda teres, the plants being from two to three feet high, and profusely flowered, forming a very fine display.

Sir F. Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), received a Silver Flora Medal for an excellent group, containing Cypripedium niveum, C. bellatulum, C. × W. H. Young (barbatum × Curtisii), C. Mastersianum, Phalænopsis Rimestadtiana, Zygocolax × Veitchii, Lælia Boothiana, some good Odontoglossum crispum, Cymbidium Devonianum with seven spikes, and other plants.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), obtained a Silver Banksian Medal for a fine group, containing the original plant of Dendrobium × formoso-Lowii, D. × Dalhou-nobile, Cattleya intermedia Aquinii with peloriate flowers, Brassocattleya × nivalis, B.-c. × Digbyano-Schroderæ, Masdevallia × Rushtoni, and others. Awards of Merit were given to Masdevallia ignea Burford var., a very fine form, and Chysis × Sedeni (Limminghii × bractescens), and a Botanical Certificate to Epidendrum odoratissimum, a very fragrant Brazilian species.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), staged a small group of choice Odontoglossums, to which a Silver Banksian Medal was awarded. It included the fine O. crispum Venus, O. c. White Empress, O. c. Lady Buchan, O. c. Mrs. de Barri Crawshay, O. × Coradinei Crawshayanum, and O. luteopurpureum Mossii, all superbly grown.

The Hon. W. Rothschild, M.P., Tring Park (gr. Mr. Dye), obtained a Silver Banksian Medal for a fine collection, chiefly of Masdevallias, including M. bella, M. caudata xanthocorys, M. Wendlandiana, M. leontoglossa, M. Reichenbachiana, M. Chestertoni, M. Schlimii, M. simula, M. demissa, M. triangularis, M. O'Brieniana, M. × Curlei, and several other hybrids, together with the rare Houlletia odoratissima, Lælio-cattleya × Lucia, and L.-c. × Hyeana.

F. Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), was awarded a Silver Banksian Medal and a Cultural Commendation for a small group of excellently-grown Cypripedium bellatulum, C. niveum, C. concolor, and some hybrids. (See illustration on preceding page).

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, exhibited the

handsome Arachnanthe annamensis, to which a First-class Certificate was awarded. Its history and a description appears at page 38.

J. Colman, Esq., Gatton Park (gr. Mr. Bound), showed Cymbidium × Colmaniæ (C. × eburneo-Lowianum × eburneum Dayanum), to which an Award of Merit was given. The flowers are white with faint purple markings, and most like the seed parent in shape.

J. B. Joel, Esq., Northaw, Potter's Bar, received an Award of Merit for Cypripedium Rothschildianum Northaw var., a very fine form.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent some splendidly grown Odontoglossums, including the fine O. × Coradinei mirabile, the beautiful O. × crispo-Harryanum Duchess of York, and O. triumphans The Dell var., a very fine and well-bloomed plant, which gained a Cultural Commendation.

The Hon. Mrs. Evelyn Cecil (gr. Mr. Cox), showed Lissochilus Krebsii, the plant having been imported from Rhodesia.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), sent Cattleya Trianæ "Lily Blanche," Cymbidium × Lowio-eburneum giganteum, and Phaius × Norman Goodson's var.

C. L. N. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), exhibited Cattleya × Unique (Mendelii × Schrœderæ).

Sydney Jackson, Esq., Bexley (gr. Mr. Boyd), showed the fine white Odontoglossum crispum magnificum.

F. M. Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), sent Cymbidium Schrœderi, Rolfe, an Annamese species described at page 39.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very fine group, to which a Silver-gilt Flora Medal was awarded. It contained Brasso-cattleya × Digbyano-Warscewiczii, B.-c. × Digbyano-Mossiæ, and its white variety Queen Alexandra, Lælio-cattleya × Mercia, L.-c. × G. S. Ball, L.-c. × callistoglossa, L.-c. × Hyeana, Cattleya × Wm. Murray, C. × Empress Frederick, some good Oncidium Marshallianum, Odontoglossum × Othello (crispo-Harryanum × Adrianæ), O. crispum varieties, Epilælia × Laucheana (L. purpurata × E. atropurpurea), another curious Epilælia derived from L. tenebrosa × E. prismatocarpum, Cœlogyne Parishii, Cirrhopetalum Cumingii, Masdevallia triaristella, and others.

Messrs. J. Cypher & Co., Cheltenham, obtained a Silver Flora Medal for an excellent group, containing Lælia Boothiana, L. purpurata, Lælio-cattleya × highburiensis, L.-c. × Hyeana, Cypripedium niveum, C. × grande, Masdevallia × Heathii, Dendrobium × Nestor, some brilliant Cattleyas, and some fine examples of Miltonia vexillaria and varieties of Odontoglossum crispum.

Messrs. Hugh Low and Co., Enfield, were awarded a Silver Flora

Medal for a good group, containing a number of Burmese Dendrobiums, including a specimen of Dendrobium Wardianum, with over 100 flowers, Cattleya intermedia alba, a fine series of C. Schroederæ, C. s. alba, Cypripedium niveum, C. × Graceæ, C. × Gowerianum Burkinshaw's var., C. × microchilum, and others.

Messrs. Sander and Sons, St. Albans, also received a Silver Flora Medal for an effective group, containing Lælio-cattleya × callistoglossa, L.-c. × Hy. Greenwood, L.-c. × bletchleyensis, Aërides Micholitzii, Renanthera Imschootiana, Cattleya Loddigesii, C. intermedia alba, Bulbophyllum mandibulare, Vanda suavis Sanderæ, a white form, with greenish yellow spots, Oncidium Marshallianum splendens, Dendrobium Jamesianum, D. Bancroftianum, some good Odontoglossum crispum, including one very heavily blotched form, Megacliniums and other plants.

Messrs. Stanley and Co., Southgate, staged a nice group containing Odontoglossum Pescatorei, O. crispum varieties, O. × Adrianæ, Cattleya Mossiæ, and others.

DIPLOMA AWARDS.

The subjects of the special competition on this occasion were Odontoglossum crispum, Pescatorei and luteopurpureum, and Cypripedes of the ballatulum group, with their hybrids. The awards were as follows:—

ODONTOGLOSSUM CRISPUM (typical).—First Diploma to O. c. Venus; Second Diploma to O. c. White Empress; both from De B. Crawshay, Esq.

O. CRISPUM (spotted).—First Diploma to O. c. Eustace, from N. C. Cookson, Esq. Second Diploma to O. c. Raymond Crawshay, from De B. Crawshay, Esq.

O. LUTESPURPUREUM.—First Diploma to O. l. Mossii, from De B. Crawshay, Esq. Second Diploma to O. l. scaptrum, The Dell var., from Baron Schröder.

ODONTOGLOSSUM HYBRIDS.—First Diploma to O. × excellens, Dell var.; Second Diploma to O. × Coradinei mirabile; both from Baron Sir H. Schröder.

CYPRIPEDIUM BELLATULUM.—First Diploma to C. b. Exhims var., from J. F. Alcock, Esq., Exhims, Berkhampstead. Second Diploma to C. b. Wellesleyanum, from F. Wellesley, Esq.

C. NIVEUM.—First Diploma to C. n. The Premier, from F. Wellesley, Esq. Second Diploma to C. n. Purity, from J. Colman, Esq.

C. CONCOLOR.—Second Diploma, to C. c. Sanderæ Westfield var., from F. Wellesley, Esq.

At the meeting held on May 15th, the Orchid exhibits were rather less numerous, doubtless owing to the proximity of the Temple Show.

H. T. Pitt, Esq., Rosslyn, Stamford Hill, rèceived a Silver-gilt Flora Medal for five choice varieties of Odontoglossum crispum—Pittianum, with a spike of thirteen flowers in very fine condition, Pittiæ, with two spikes of fifteen and fourteen blooms, somewhat similar in character, but with more white between the blotches, Capartianum, Ashworthianum, and Magnum Bonum, the latter a fine white form.

Sir Trevor-Lawrence, Bart., Burford (gr. Mr. White), staged a fine group of rare Orchids, for which a Silver Flora Medal was awarded. It contained Masdevallias caudata, × Chelsoni, × Rushtoni, × Stella, hieroglyphica, × igneo-Estradæ, × Pourbaixii, × Doris, × Ajax, and × ferrierensis, Bulbophyllum Reinwardtii, Dendrobium × Dalhou-nobile, D. × formoso-Lowii, Epiphronitis × Veitchii, Epicattleya × radiato-Bowringiana, Epidendrum Endresii, E. glumaceum, E. elongatum, E. montanum, E. arachnoglossum, and E. Linkianum, with cut spikes of E. × O'Brienianum, E. Ellisii, E. × Boundii, E. Schomburgkii, E. radicans, and E. × xanthino-radicans.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), gained a Silver Flora Medal for a large and well-arranged group, containing Cattleya Mendelii, C. Mossiæ, C. Schrœderæ, Lælia × Latona, Lælio-cattleya × Zephyra, L.-c. × highburiensis, several fine examples of Cymbidium Lowianum, and other plants.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), staged a good group, containing Lælio-cattleya × G. S. Ball, L.-c. × Hyeana, Odontoglossum crispum varieties and other plants. A Silver Banksian Medal was awarded.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), sent Odontoglossum × ardentissimum Dorothy Fox, a pretty white variety with rose-purple blotches, somewhat like a large O. Pescatorei in shape. An Award of Merit was given to Cypripedium × Miss Louisa Fowler var. superba (Chamberlainianum × insigne var.), a particularly fine form.

F. Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), exhibited Cypripedium barbatum The Premier, Lælia cinnabrosa var. Flambeau, the orange-tinted flowers of which had a reddish glow, and the fine Cypripedium Lawrenceanum hackbridgense. Cattleya intermedia White Queen, a handsome large pure white form, obtained an Award of Merit.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), showed a splendidly-cultivated specimen of Odontoglossum crispum Westonbirt var., bearing three spikes and thirty-two flowers, which was deservedly awarded a Cultural Commendation, and Cattleya Mossiæ Reineckiana Westonbirt var., also in fine condition, bearing a spike of four flowers.

Colonel Brymer, Ilsington House, Dorchester (gr. Mr. Powell), showed

Cœlogyne × Brymeriana (Dayana × asperata), the plant bearing a pendulous raceme of nineteen flowers, with whitish sepals and petals, and the lip marked with light brown.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), showed the handsome Odontoglossum crispum Sanderianum, bearing eleven flowers.

Sir F. Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), sent Odontoglossum tripudians, called "Cecil Grey," a fine, heavily-blotched form.

Messrs. Cypher and Sons, Exotic Nursery, Cheltenham, staged a fine group, for which a Silver Flora Medal was awarded. It contained Cypripedium niveum, C. × Gowerianum, C. × G. magnificum, C. × Fascinator, C. × Harrisianum superbum, C. callosum Sanderæ, some good examples of Miltonia vexillaria, Cattleya Schrœderæ, C. Mendelii, C. Skinneri alba, Lælia purpurata, the fine L. p. Duchess, Lælio-cattleya × purpurato-Aclandiæ, L.-c. × Hyeana, L.-c. × G. S. Ball, and other plants.

Messrs. Hugh Low and Co., Enfield, gained a Silver Banksian Medal for an excellent group, containing a fine example of Cattleya Skinneri with seventy-two flowers, C. Mossiæ, C. Schrœderæ, C. Lawrenceana, the handsome Lælia purpurata Davisii, Dendrobium Bensonæ, and others.

Messrs. J. and A. A. MacBean, Cooksbridge, showed Odontoglossum crispum Aphrodite bearing twelve flowers, having very broad segments tinted with rose.

Mr. James Douglas, Edenside, Great Bookham, showed the fine Cypripedium Lawrenceanum Douglas' variety, somewhat resembling the variety Hyeanum.

DIPLOMA AWARDS.

The subjects of the special competition on this occasion were Lælia purpurata, Lælio-cattleya × elegans, L.-c. × Schilleriana, Miltonia vexillaria and Epidendrum radicans, in each case with their hybrids.

MILTONIA VEXILLARIA.—First Diploma to M. v. Memoria G. D. Owen, from Sir F. Wigan, Bart. Second Diploma to M. v. magnifica, from Jeremiah Colman, Esq.

HYBRIDS OF EPIDENDRUM RADICANS.—First Diploma to Epiphronitis × Veitchii; Second Diploma to Epidendrum × Boundii (Burtoni × radicans); both from Jeremiah Colman, Esq.

LÆLIA PURPURATA.—H. L. Bischoffsheim, Esq., The Warren House, Stanmore, and R. I. Measures, Esq., Camberwell, showed cut flowers of good examples of this Orchid, but no awards were made.

There were no exhibits of Lælio-cattleya × elegans and L.-c. × Schilleriana, or their hybrids.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this society was held at the Coal Exchange, Manchester, on April 26th, when a few choice exhibits put in an appearance, the awards including one First-class Certificate and three Awards of Merit.

J. Leemann, Esq., Heaton Mersey (gr. Mr. Smith), received a First-class Certificate for the handsome Lælio-cattleya × Frederick Boyle var. Kerchoveæ, a charming hybrid of which a note appeared at page 156.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), received an Award of Merit for Odontoglossum crispum westpointense, a well shaped and richly coloured variety.

E. Rogerson, Esq., West Didsbury (gr. Mr. Price), received an Award of Merit for Cypripedium × Berkeleyanum Oakdene var., said to be a cross between C. villosum and C. bellatutum.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), received an Award of Merit for the beautiful Miltonia × Bleuana Stevensii (M. Roezlii alba × M. vexillaria Leopoldi), which was figured at page 313 of our last volume. The Certificate appears to have been given under the name of Odontoglossum vexillarium var. Stevensii.

J. Bottomley, Esq., Longsight, exhibited two good forms of Dendrobium nobile, to which a Vote of Thanks was accorded.

O. O. Wrigley, Esq., Bury (gr. Mr. Rogers), exhibited a curious trilabellate form of Odontoglossum crispum.

Messrs J. Cowan & Co., Gateacre, J. Cypher & Sons, Cheltenham, J. W. Moore & Co., Rawdon, and Mr. S. Allen, Sale, were accorded Votes of Thanks for interesting exhibits.

THE meeting held on May 10th was the last of the 1905-6 session, and produced a very fine display of Orchids.

H. T. Pitt, Esq., Stamford Hill (gr. Mr. Thurgood), sent a few choice Odontoglossums in very fine condition, the handsome O. crispum Pittianum receiving a Gold Medal. A First-class Certificate was given to O. c. Capartianum. The third was the remarkable O. c. Ashworthianum, almost entirely violet-purple with a white margin, but the spike had been partially disbudded.

R. Ashworth, Esq., Newchurch (gr. Mr. Pidsley), staged an excellent miscellaneous group, to which a Silver Medal was given. Odontoglossum crispum Princess Ena received an Award of Merit.

G. W. Law-Schofield, Esq., Rawtenstall (gr. Mr. Shill), staged a good miscellaneous collection, which gained a Silver Medal.

P. Smith, Esq., Ashton-on-Mersey, received a Silver Medal for a group of Cattleyas and Odontoglossums, with a good plant of Oncidium lamelligerum.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), also received a Silver Medal for a group in which good Odontoglossums and forms of Cattleya Mendelii were conspicuous.

John Leemann, Esq., Heaton Mersey (gr. Mr. Smith), sent a fine plant of Phalænopsis amabilis Rimestadtiana, which gained a Cultural Certificate.

R. le Doux, Esq., West Derby (gr. Mr. Davenport), staged a small group, chiefly of Odontoglossum crispum, gaining a Vote of Thanks.

M. A. A. Peeters, Brussels, sent Odontoglossum × Lambeauianum and O. crispum var. Uccle, the latter a fine spotted form, to which a First-class Certificate was given.

Mr. John Robson, Altrincham, was accorded a Vote of Thanks for a few choice Odontoglossums—O. crispum vars. Raymond Crawshay, Excelsior and Mrs. Peeters, with O. × Wilckeanum var. Golden Queen.

Messrs. McBean, Cooksbridge, Sussex, exhibited a most beautiful yellow Odontoglossum, called O. crispum aureum excellens, though the Committee by vote decided that it was not an ordinary crispum. It has since received an Award of Merit from the R.H.S. under the name of O. c. aureum Laburnum].

Messrs. J. Cowan & Co., Gateacre, sent a natural hybrid Odontoglossum.

Messrs. A. J. Keeling & Sons, Bradford, exhibited a small group, principally of Cypripedes.

Messrs. J. W. Moore, Ltd., Rawdon, also contributed a small group, including a good form of Dendrobium × Euterpe.

The Annual General Meeting was held in the afternoon of the same date, and was well attended. The Hon. Secretary's report was read and adopted, showing the work of the Society for the past year to be of excellent character: the finances were also in good condition.

Mr. E. Ashworth was elected Chairman: Mr. A. Warburton, Vice-Chairman; Mr. S. Gratrix, Treasurer; and Mr. P. Weathers, Hon. Secretary.

A rule was also passed which will allow members in the coming session to exhibit disbudded plants.

CYMBIDIUM INSIGNE.

A GROUP of plants of this distinct and striking Cymbidium was exhibited at the Temple Show by M. Georges Bronckart, Thurin, Belgium, but through some misapprehension the Orchid Committee changed the name to C. Sanderi. The species was originally discovered by M. G. Bronkart, who presented a dried specimen and painting to Kew in September, 1901, through Mr. G. Schneider, of Chelsea. It was discovered in the February previous, the collector stating that it was a terrestrial Orchid, found growing along ravines, in sandy soil, at 4,000 to 5,000 feet altitude, in Annam, and that the spikes reached a length of 3 to 4½ feet, and bore ten to fifteen

flowers, of a rosy lilac colour, with numerous crimson blotches on the lip. It was at once named and described, the description ultimately appearing in 1904 (*Gard. Chron.*, 1904, i. p. 387). On February 14th of the following year a plant called Cymbidium Sanderi received a First-class Certificate from the R.H.S., which has proved to be identical, and the original name must, of course, be retained. This plant was discovered by Micholitz, being provisionally called Cymbidium n. 1. It was said to be almost terrestrial, being found on steep banks, in ravines, among thick grass, and growing chiefly in a thick clayey soil—never on trees—and producing long spikes of rosy red flowers (*Gard.*, 1904, ii. p. 141). At the time this was suspected to be identical with C. insigne (*O.R.*, xii. p. 280). The species has ovoid-globose pseudobulbs, with about ten or twelve leaves, of two to three feet long by about half an inch broad, while the scapes are erect, and rather longer than the leaves. The flowers are about $3\frac{1}{2}$ inches in diameter, with lanceolate-oblong sepals and petals, white, more or less tinged with pink, and dotted at the base, while the broad three-lobed lip is handsomely blotched with crimson. It was exhibited by Messrs. Camille, Frères, at the Liège Horticultural Exhibition, in May, 1905, in a group of new plants (*O.R.*, xiii. p. 174). None of the plants exhibited has borne a fully developed spike, but it should be a fine thing when it becomes strong.

R. A. R.

ODONTOGLOSSUM × CRISPODINEI.

WHEN this interesting artificial hybrid was described and figured at page 241 of our last volume, it was remarked that had it appeared among imported crispums it would probably have been taken for a small O. × Coradinei of good shape, and it may possibly be that some forms referred to O. × Coradinei are secondary hybrids. A flower has been sent from the collection of W. W. Butler, Esq., of Edgbaston, Birmingham, which immediately recalls O. × crispodinei, and may have been derived from similar parentage. It was purchased as an unpotted plant from an importation of O. crispum. The sepals are over half an inch broad, and the petals over five-eighths, while they reach two and a half inches from tip to tip. The lip is three-quarters of an inch broad, and relatively much shorter than in O. × Coradinei. The sepals and petals are ivory-white, becoming light yellow towards the margin, and the latter has two to four brown blotches, and the former about twice as many. The lip is very fleshy, white, and heavily blotched with brown, and the column wings are small and nearly entire, both showing the most unmistakable evidence of O. Lindleyanum. It will be interesting to see what the flower is like when the plant becomes strong, but at present it is more like O. × crispodinei than an ordinary form of O. × Coradinei.

R. A. R.

DENDROBIUM SUPERBUM AND VAR. DEAREI.

WE have received from Mr. M. J. Pope, Naugatuck, Conn., U.S.A., a dried flower of a beautiful white form of Dendrobium superbum, together with a photograph, showing both it and the typical form, and this photograph we

Fig. 21. DENDROBIUM SUPERBUM. Fig. 22. VAR. DEAREI.

have much pleasure in reproducing. The large upper spray is the variety, and the rest belongs to the type. It was imported from the Philippines with a lot of Phalænopsis. Mr. Pope writes:—"I have over eighty plants

of D. superbum, over four hundred pieces, if they had been potted up separately, but for want of time and room as many plants as could be got into five to six or seven-inch baskets were put in together. When flowering time came this spring, two white forms were found growing in the same baskets with the type. The flowers are of the purest white throughout, with the exception of a very faint lemon yellow flush in the tube of the lip. They have the peculiar rhubarb scent of the type, but apparently not quite so strongly. I am sending you a picture of this plant as it flowered here, the uppermost spray being the white form and all the rest the type. I showed it at Boston on March 24th last, when the Massachusetts Horticultural Society awarded it a Silver Medal under the name of D. superbum Colonel Deare's variety." The flower sent is a very fine one, measuring over 4½ inches from the apex of the dorsal sepal to that of the lip, and it retains its characteristic rhubarb scent, even in the dried state."

The variety Dearei appeared in the collection of Lieut.-Col. Deare, of Englefield Green, in 1882, receiving a First-class Certificate from the R.H.S., on April 11th, under the name of D. macrophyllum var. Dearei, when exhibited by his gardener, Mr. Fagg (*Gard. Chron.* 1888, i. p. 507). It was well figured by Mr. Day in April, 1886 (*Coll. Draw.* xlix. t. 49), from a plant in Baron Schröders collection. The variety Burkei differs in having a light purple throat to the lip, while in Huttoni the same part is bright purple.

THE TEMPLE SHOW.

THE nineteenth Great Annual Flower Show of the R.H.S., held in the Inner Temple Gardens, opened on Tuesday, May 29th, in delightful weather, and will be continued over the two following days. The centre of the large tent was, as usual, devoted to Orchids—we only found two small groups elsewhere—and there was a large and brilliant display, in the freshest possible condition, to which end the comparatively cool weather of the preceding week has been favourable. Nothing sensational in the way of novelties was observed, but there was evidence of progress, particularly among Odontoglossums, and some recent hybrids were exhibited in improved condition. Seven Awards of Merit were given by the Orchid Committee. The judges for Orchids were Messrs. W. A. Bilney, H. J. Chapman, J. Gurney Fowler, and H. Little, and their awards, which included three Gold Medals, will be found in the following report. The Veitchian Cup, value fifty guineas, was on this occasion awarded to Messrs. Sander and Sons, St. Albans, for their magnificent group of Orchids and new and rare plants, the judges for this being Messrs. Jeremiah Colman, Jas. Gibson, Major Holford, Sir Trevor Lawrence, J. Methven, P. C. M.

Veitch, and James Whytock. At the outset it may be remarked that consideration of space only permits us to give a few of the more noteworthy features of the numerous fine groups staged.

Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), staged a magnificent group, occupying one bay of the tent, to which a gold Medal was awarded. It contained a lot of fine Odontoglossums, Cattleyas, Lælio-cattleyas, Miltonia vexillaria, brilliantly-coloured Masdevallias, Epidendrum × Boundii, &c., the centre part in front being covered in moss, in which were bedded out a lot of Cypripedium niveum, with such charming things as C. callosum Sanderæ, Masdevallia Davisii, Cochlioda Nœtzliana, Cattleya Mossiæ Reineckeana, Balbophyllum Lobbii, &c. Other interesting things were Cymbidium Lowianum concolor, several examples of Lælio-cattleya × Sunrise, Odontoglossum polyxanthum, O. cirrhosum, Cypripedium Argus, C. Gratrixianum, Masdevallia Veitchiana, &c. &c. Awards of Merit were given to Masdevallia Harryana Gatton Park var., a very large and richly-coloured form, and to Cattleya Mossiæ Jeremiah Colman, a large light rosy purple form, having a remarkably broad light margin round the richly-coloured disc of the lip.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), staged a remarkably rich and varied group, to which a Silver Cup was awarded. We noticed a very fine plant of Zygopetalum × Roeblingianum with three spikes of flowers, and three others in bud, Zygonisia × Rolfeana with two racemes, Cœlogyne Dayana, a fine plant of Dendrobium Falconeri, Brassia brachiata, Cochlioda Nœtzliana, Thunia Marshalliana, Cattleya × porphyrophlebia, C. Forbesii, Odontoglossums citrosmum, × Rolfeæ, tripudians, × Wilckeanum oakwoodiense, a finely blotched form with white ground, × Ossultoni, Lælia tenebrosa, Aërides Fieldingii, a finely flowered example of Sobralia macrantha alba, with the type, Oncidiums Gardneri, Papilio, Marshallianum and monachicum, Brassocattleya × striata, Cymbidium Devonianum, Masdevallias ignea, Veitchiana, and ephippium, Cypripedium Mastersianum, a good form of Lælio-cattleya × Vinesiæ, Platyclinis latifolia, and other showy things, also in front was a charming little group embedded in moss, containing good examples of Cymbidium tigrinum, Leptotes bicolor, Phalænopsis speciosa, violacea and Lueddemanniana, Miltonia Roezlii alba, Masdevallias Chestertoni, Carderi and × Pourbaixii, Saccolabium miniatum, Odontoglossum Œrstedii, &c.

R. Ashworth, Esq., Newchurch, near Manchester (gr. Mr. Pidsley), received a Silver Flora Medal for a choice group, containing a few good Cattleyas, Cypripedium callosum Sanderæ, and some choice Odontoglossums. O. × loochristiense The Mikado is a very beautiful form with a dense inflorescence of fourteen bright yellow flowers, which are turned to one side more than usual. O. × ashlandense (polyxanthum × Adrianæ)

has yellow sepals and petals, and a whitish lip, all heavily blotched with brown. Two forms of O. × Fascinator, which, we believe, were raised by M. Peeters from O. × Adrianæ ♀ × O. crispum Queen Victoria ♂ were also promising. O. crispum Coronation is a fine thing heavily blotched with light cinnamon-brown. Lastly, a fine white form, with a few round, brown blotches, is, we understand, a form of O. × Lambeauianum, though so distinct in appearance.

Mrs. Collingwood, Lilburn Tower, Alnwick (gr. Mr. Lovett), received a Silver Flora Medal for a beautiful little group, containing several well flowered Vanda teres and a couple of fine Dendrobium Falconeri.

Mrs. Ernest Hills, Penshurst (gr. Mr. Ringwood), also received a Silve Flora Medal for a fine group of Miltonia vexillaria.

N. C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Chapman), received an Award of Merit for Phaius × Doris (P. Cooksoniæ × oakwoodiensis), a charming rosy purple flower.

The Hon. Walter Rothschild, Tring Park (gr. Mr. Dye), sent Brassocatlælia × Tring Park hybrid (L.-c. × eximia Arnoldiana × B. Digbyana), a fine rosy lilac flower with some darker veins on the lip.

J. Rutherford, Esq., Blackburn (gr. Mr. Lupton) sent a few white forms of Cattleya Mossiæ.

M. Jules Hye de Crom, Ghent, exhibited a pretty violet blotched Odontoglossum and O. × percultum var. Junon, the latter a fine form, closely spotted and blotched with light cinnamon brown, gaining an Award of Merit.

W. A. Bilney, Esq., Fir Grange, Weybridge (gr. Mr. Whitlock), sent Dendrobium Dalhousieanum luteum, a pretty light yellow variety with the usual blotches on the lip.

Major Holford, C.V.O., Westonbirt (gr. Mr. Alexander), sent two richly coloured forms of Cattleya Mossiæ.

M. F. Lambeau, Brussels, sent Odontoglossum × Lambeauianum var. lucidum, a very richly coloured form, and two others, one of them having rather light spots not extending much beyond the middle of the segments.

In the Herbaceous tent, sadly out of place, we noticed a group of over eighty flowers of Cattleya Mossiæ, apparently cut from the same number of plants, for scarcely any two of them were alike. They were from the collection of W. J. Caparne, Esq., of Guernsey, and apart from albino forms show most of the wide variation to which the species is subject, forming a most instructive series.

G. P. Walker, Esq., Heathwood, Putney Heath, sent a flower of Lælia tenebrosa, having more elongated segments than the former, and the front of the lip very deep purple.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent the richly coloured Cypripedium Lawrenceanum hackbridgense, and a fine seedling which appeared to be a hybrid between C. barbatum and C. Lawrenceanum.

Messrs. Sander & Sons, St. Albans, staged a magnificent group, nearly two bays in extent, extremely rich and varied and most artistically arranged, some of the more conspicuous subjects being elevated so as to stand out from the others, giving a very diversified surface. A Gold Medal was deservedly awarded, and the Veitchian Cup for the best individual exhibit was given to this and a group of new and rare plants also shown by the firm. It contained a brilliant series of Odontoglossums, Cattleyas, Lælio-cattleyas, Oncidiums, Masdevallias, &c. The gem of the group was Odontoglossum crispum Leonard Perfect, a noble white form of perfect shape, with an enormous roundish light cinnamon blotch on each segment. O. × ardentissimum Countess of Tankerville was a very richly coloured form with an inflorescence of fifteen flowers: Lælio-cattleya × Golden Glory (L.-c. × Zephyra × C. Mossiæ Reineckiana) is a rich yellow flower, most like the seed parent in shape, with some rosy salmon colour on the front of the lip. A batch of seedlings from Epidendrum × Endresio-Wallisii × Endresii showed remarkable variation, including forms with purple, yellow and spotted segments, with much variation in the lip. Other rare or choice things were Cymbidium Huttoni with three racemes, C. madidum, Renanthera Imschootiana, Zygopetalum × Roeblingianum, a handsome Brasso-cattleya × Mrs. John Leemann, Masdevallia × Rushtoni, M. Schlimii with about sixteen racemes, Maxillaria Sanderiana, Lycaste aromatica, L. cruenta, and a fine example of L. × Ballıæ, Phalænopsis Schilleriana, Dendrobium Phalænopsis, D. superbum, Aërides Houlletianum, Camarotis purpurea, Oncidium superbiens, Angræcum Sanderianum, Bifrenaria Harrisoniæ, two beautiful specimens of Cattleya Skinneri, Cypripedium × Vipanii, C. præstans, C. Godefroyæ leucochilum, Eulophia gracilis, Acanthophippium javanicum, Uropedium Lindenii, and a host of the more familiar showy Orchids.

Messrs. Charlesworth and Co., Heaton, Bradford, also gained a Gold Medal for a remarkably rich and varied group two bays in extent, in which Cattleyas, Lælio-cattleyas, Odontoglossums, and other showy Orchids occurred in profusion, and were arranged with telling effect. Two groups of Lælio-cattleya × G. S. Ball provided a mass of rich orange colour, but the numerous rose and purple forms must be passed over unnoticed. Odontoglossum crispum forms were good, and numerous other species and hybrids were noted, among them two good O. × Lambeauianum, O. × Phœbe and O. × Othello in improved condition, O. × excellens, &c., &c. A noble specimen of Anguloa Clowesii, bearing about thirty flowers, was a

remarkable example of good culture. Cattleya × Bowringiano-Schilleriana is a dwarf hybrid of intermediate shape and very brilliant colour. Other interesting things were a good Cœlogyne Dayana, a fine lot of Phalænopsis amabilis, Renanthera Imschootiana, a finely flowered example of Trichopilia coccinea, Cattleya Skinneri alba, C. × Whitei, C. × Madame Myra Peeters, Cymbidium Lowianum concolor with a noble specimen of the type, Zygopetalum crinitum, Oncidium Gardneri, Bulbophyllum Lobbii var. Henshallii, and numerous examples of the more familiar showy Orchids; also a group of Anœctochili, including several species of these charming little variegated-leaved Orchids.

Messrs. Hugh Low & Co., Enfield, staged a large and brilliant group, in which a fine lot of Cattleyas and Lælia purpurata forms, with other showy Orchids of the season, were conspicuous. Specially noteworthy was a plant of the richly-blotched Odontoglossum crispum Fearnley Sander, other interesting things including Vanda Denisoniana, Cœlogyne pandurata, Dendrobium crepidatum, Colax jugosus, Brassia verrucosa, Cattleya intermedia alba, Oncidium phymatochilum, the clear yellow O. ampliatum citrinum, Cypripedium Stonei, C. Rothschildianum, C. Druryi, a group of C. niveum, Epidendrum aromaticum, E. glumaceum, the rare E. campylostalix, Saccolabium ampullaceum, Leptotes bicolor, Cirrhopetalum picturatum, the singular little Masdevallia triaristella, Bulbophyllum cupreum, Phalænopsis Lueddemanniana, and other interesting things. An Award of Merit was given to Cattleya Mendelii Mercury, a pretty blush pink form with the front of the lip rich purple crimson. A Silver Cup was awarded for Orchids and flowering plants.

M. Ch. Vuylsteke, Loochristi, Ghent, staged a group of choice hybrid Odontoglossums raised by him, to which the Lindley Medal was appropriately awarded. It included fine examples of O. × Wilckeanum, O. × concinnum, O. × amabile Goliath with a remarkably large flower, O. × ardentissimum tigrinum, a fine dark form, O. × a. Apollo, bearing a fine inflorescence of twenty-one richly-marked flowers, O. a. × Venus, having the segments richly suffused rather than blotched with purple, a most beautiful form, to which an Award of Merit was given. A similar award went to O. × percultum Orion, bearing a very compact inflorescence of rosy lilac flowers of excellent shape, and closely blotched with light cinnamon. Another striking thing bore the name of O. × altum var. Bellone, and was recorded as O. × ardentissimum × Hallii. It is most comparable to a well-shaped and blotched O. × Wilckeanum with a white ground.

Messrs. James Cypher and Sons, Cheltenham, staged a very bright and effective group, a bay and a half in extent, to which a Silver-gilt Flora Medal was awarded. It contained a fine series of Cattleyas, Lælias, Laliocattleyas, Odontoglossums, Miltonias, and other showy things of the

season. Among those specially noticed was a fine Lælio-cattleya × Baroness Schröder (C. Trianæ × L. Jongheana), rich purple with an orange throat to the lip, Odontoglossum crispum giganteum, O. Uroskinneri, Dendrobiums thyrsiflorum, atroviolaceum and nobile, Thunia Bensonæ, Oncidium concolor, Masdevallia Veitchiana, M. macrura, a few good Epidendrums, Cypripedium × Lawregower, C. × Charlesianum Cypher's var., approaching the insigne type, &c. In front of the group were a few dwarf things bedded out in moss, including a good clump of Leptotes bicolor, the pretty Miltonia Phalænopsis, a lot of Cypripedium niveum, Masdevallia Schrœderiana, a well-flowered M. × Hincksiana, and others.

Messrs. William Bull and Sons, Chelsea, staged a good group of showy Orchids one bay in extent, including numerous Odontoglossums. Cattleyas, Lælia purpurata, Cymbidium Lowianum, &c. The most noteworthy plant in the group was a good Cymbidium rhodochilum, with several of the lower flowers of the spike expanded, and we also noted good examples of Odontoglossum × ardentissimum, × Wilckeanum, crispum and Harryanum, Sophronitis grandiflora, Cattleya intermedia alba, Masdevallia cucullata, M. Schrœderiana, &c. A Silver-gilt Flora Medal was awarded for Orchids and Foliage plants.

Mr. John Robson, Altrincham, staged a bright little group near the entrance to the smaller tent, containing good examples of numerous showy species of the season, in which we noticed a good plant of Oncidium sphacelatum, and a very richly-coloured hybrid Cypripede of unrecorded parentage.

M. G. Bronckart, Thurin, Belgium, staged a nice batch of the distinct Annamese Cymbidium insigne, Rolfe, a native of Annam, which was described about two years ago from dried specimens. See *O.R.* xii., p. 230. The plants bore an aggregate of about two dozen spikes, the flowers being white, prettily spotted with purple on the lip. The plants are not yet established, being a long way behind the wild example, but it will evidently develop into a fine thing.

In Messrs. James Veitch & Sons' group outside we noticed a pan of the striking Cypripedium tibeticum, recently introduced by Mr. Wilson, and figured in the *Botanical Magazine* (t. 8070): and numerous other hardy Orchids were observed in various groups of herbaceous and alpine plants, these including the handsome C. macranthum, Reginæ, acaule, Calceolus, pubescens, montanum, Orchis foliosa, purpurea, maculata, laxiflora, militaris, undulatifolia, papilionacea, italica, O. hircina, O. ustulata, the pretty little O. Brancifortii, the rare North American O. spectabilis, Ophrys lutea, O. fusca, Aceras anthropophora, Habenaria bifolia, and even a solitary example of the Bird's Nest Orchid, Neottia Nidus-avis, evidently a wild example.

ODONTOGLOSSUM CRISPUM G. W. LAW-SCHOFIELD.

THIS is a very handsome variety of Odontoglossum crispum, of which a flower and photograph have been kindly sent from the collection of G. W. Law-Schofield, Esq., New-Hall-Hey, Rawtenstall, near Manchester. The form and substance of the flower are excellent, and the ground colour of the petals is pure white, while on the sepals occurs a little rosy suffusion. The colour of the blotches is of the richest chestnut purple, and extends through

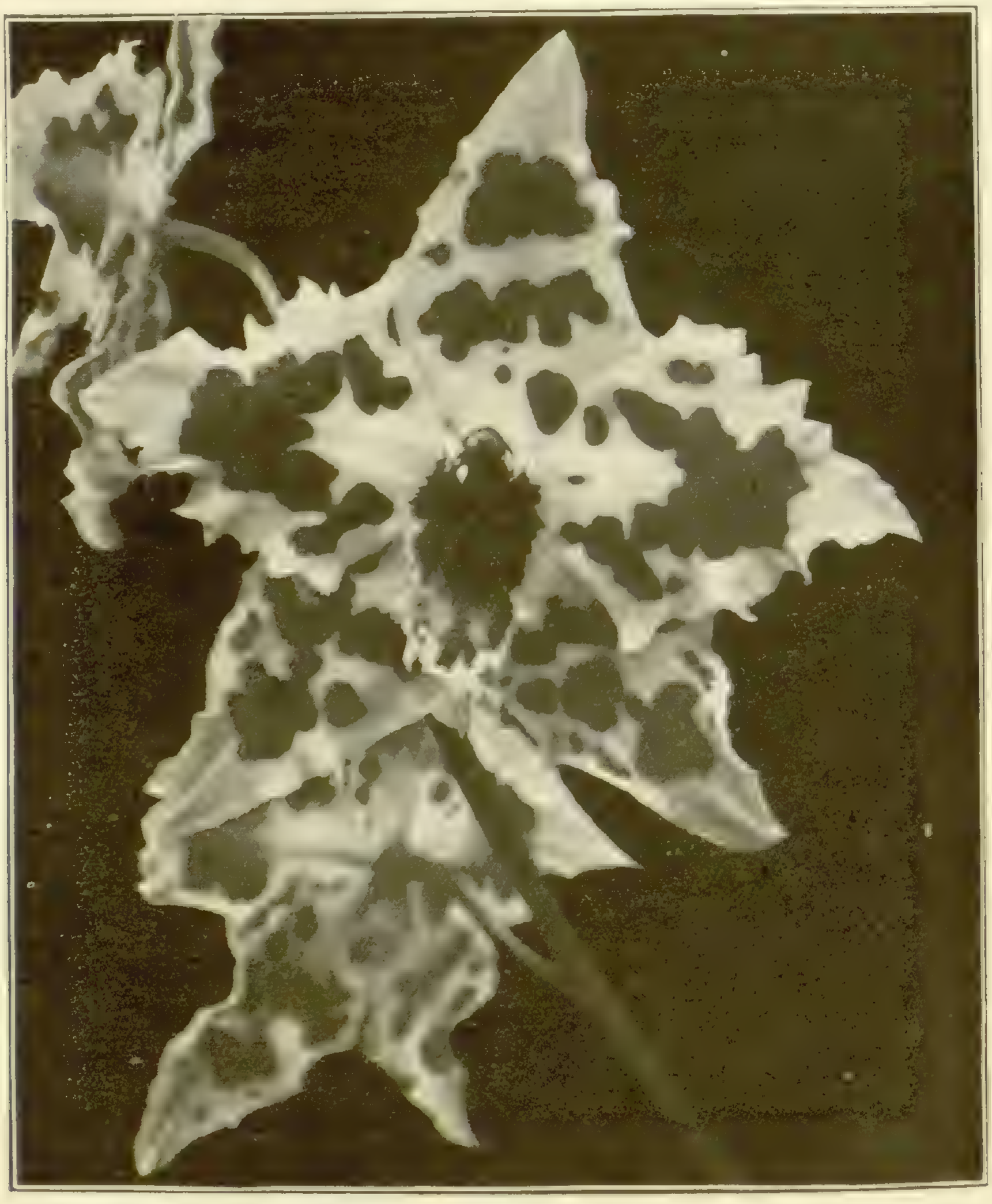

Fig. 23. ODONTOGLOSSUM CRISPUM G. W. LAW-SCHOFIELD.

to the back, as will be seen by the lowermost flower, and the side view of the upper one. The lip is rather small, but richly coloured, being almost reduced to one solid chestnut blotch, with a white margin and some yellow markings on the crest. The flowers are represented natural size. The inflorescence produced three flowers, and when the plant becomes strong it promises to stand in the front rank among O. crispum varieties.

CALENDAR OF OPERATIONS FOR JUNE.

By J. M. BLACK, Streatham.

ALL our endeavours should be directed during the next two or three months to keeping healthy growing conditions in all the houses, for now the great majority of the plants are in active growth, and the most must be made of our variable and ofttimes much too short summer.

It is questionable if abnormally large pseudobulbs can really be called good growing, although most of us try to get them. A very large pseudobulb, if flowered, is frequently followed by one much smaller, which is but a natural reaction, and this can be especially noted among Cattleyas. Some Odontoglossums and Dendrobiums seem much more tractable, for the bulbs made under our artificial conditions are easily maintained much larger than those imported, and the flowers are, I believe, proportionately much finer.

But the principal object in good growing should be the procuring of ripe pseudobulbs, in preference to mere size, and this can only be done by judicious ventilation and shading, in conjunction with the appropriate use of the right potting material. I have tested to my own satisfaction the futility of producing—in rich leaf soil mixtures—large pseudobulbs at the expense of ripeness, and Odontoglossums give evidence of unripened succulent growing sooner than anything else. There is constantly being brought under our notice the great difference in the quality of the flowers of a standard variety on plants from different collections.

Broadly speaking, too much air cannot now be given to the Cattleya, Intermediate, and Odontoglossum houses during the day, when the weather is fine,—on still sultry days even leaving the doors open. On sunny mornings ventilation will have to be increased immediately, and the shading lowered. Although a run up in the afternoon may be permitted, it should not be allowed in the morning. First the dry plants should be watered, and then the houses syringed, and it is just as well to take a walk round with the watering-can again before closing the houses in the afternoon, as some plants may appear moist in the morning which would really benefit by being watered. Frequent sprayings overhead and between the pots will have to be given, but the foliage should be allowed to get thoroughly dry at least once during the day, and the best time to have the houses dry is for an hour or two before closing up. We do not often find it necessary to damp or syringe any more in the houses that are closed at half-past three. Before closing, the houses are well damped, and the plants sprayed—lightly or heavily according to the weather—and these two and a half hours of closeness have the effect of retaining the moisture, and the leaves which may have become a bit parched, will revel in the heavy, still,

moist atmosphere. These two and a half hours of closeness constitute the only period out of the twenty-four that the houses are entirely without air —from 3.30 to 6—and at six the re-opening of the bottom ventilators will again start the air in circulation. A genial warmth must be kept in the pipes all night, not so much for the sake of the heat, which, during many nights, will not be required, but to keep the air on the move. This is really a very important point in the summer growing of Orchids. In the Intermediate or Mexican Houses, when the night temperature is above fifty-five, one *might* with safety allow the pipes to become cold, but air should not be reduced in consequence of that, but quite the reverse. We do not generally put top air on our Cattleyas at night thus early, unless the weather be very close. Air, top and bottom, should now be nearly constantly on in the Odontoglossum house, and no more artificial heat should now be wanted until the summer is over.

TEMPERATURES.—The temperatures for the next month or two will be easily maintained, but one must always be on the watch for cold snaps, which are not infrequent. The East Indian house should not be allowed to fall below 70° at night, with a rise of 5° to 10° during the day in sunless weather. More frequently than not these temperatures will be exceeded, but one should not strive after a much higher night temperature. The Cattleya house may drop at night to 65°, and even to 60° in the morning, and the Intermediate house 5° lower. It is not so much a question of the actual temperatures, as of, literally speaking, good breathing conditions. We learn that in the forest the dew falls at night, and that the plants become saturated, but I should not advise this to be copied at home, with perhaps some reservation in the case of Odontoglossums. A stagnant night atmosphere is bad, even when warm; when cold, of course, it is much more dangerous. The Odontoglossum house should not now be allowed to drop much below 55°, and it may be necessary now and again during the summer to turn on a little heat in this house.

ODONTOGLOSSUM SEEDLINGS.—These are making very good progress now. Two-year-old plants are finishing up their first pseudobulbs, and the leaf expansion in these will now be less marked than it has been for some months. In many cases the pseudobulbs are finished, and the new growth has started. When these new growths are about two inches high, the plants may, if they are in want of it, be repotted. The first pseudobulbs not flowering, the new growths shoot immediately—sometimes even before the pseudobulb is finished—and will grow very well all the summer, if the temperature is kept well down. They grow best during the summer in a temperature of 65° by day and 60° by night, in a steady, buoyant, moist atmosphere. Small Odontoglossum seedlings will stand very little sunshine, and great care must be taken, especially in the morning and the

evening. Five or ten minutes' strong sun might be sufficient to cause great disfigurement among the foliage, even causing whole leaves to become yellow and drop off. Two of the chief causes of "tipping" among these little plants are (1) too much light, and (2) too little air at night. With the greater precaution as to shading, the general treatment accorded imported Odontoglossums will suit the seedlings also.

Cattleya, Odontoglossum and other small seedlings which will have been surfaced with sphagnum moss, will be in danger of being smothered if the moss is not kept clipped back, so that air can get round the base of the pseudobulbs. Large plants, although in less danger, must have the moss kept down also. It is difficult to water carefully when the moss gets very long.

EAST INDIAN HOUSE.—Angræcum citratum, A. fastuosum, and any other plants, which have not yet been done, of this and the allied genera, can have fresh material given them this month, if out of flower. Root action all round will now be strong, and the greatest of care must be taken in repotting to break but as few roots as possible. The compost recommended for Phalænopsis recently will be found to be generally satisfactory. The comparatively close, moist atmosphere, and the abundance of mid-summer heat, will quickly re-establish plants disturbed at this season. In surfacing these plants with sphagnum moss, work the moss in tightly, as it will hold much less water than if laid on loosely. Great care must be taken in watering freshly potted plants. It is not safe to keep on counselling the giving of large quantities of water during the summer, as the frequent syringing and damping considerably hinders evaporation, and it is a fact with me that some of our hot seedling houses dry out nearly, if not quite, as much during the winter as during the summer. In the winter we require a lot of fire heat and no syringe, while during the summer there is a lot of syringe and little fire heat; and there is little question but that more plants suffer through over watering than through getting insufficient.

VANDA TERES.—This is really one of the best of the genus, and while there is no difficulty in growing it, there is considerable difficulty in getting it to flower freely, for the reason that being a plant which requires more direct sunshine than most other Orchids, it rarely gets sufficient for its needs. It used to flower at Ferrieres very freely, because a very small span roofed house was given over exclusively to it. The plants were here planted out in sphagnum, and trained up the roof. The two chief factors in its cultivation are syringe and sunshine. Several stems can be planted together in a pot, well down among the crocks, and surfaced tightly with sphagnum moss. They will require support, and can be tied to bamboo or, what are better, teak wood sticks. The Mexican, or Intermediate, house

conditions will be found suitable, if some contrivance be had to give them full sunshine.

THUNIAS.—When these have flowered, the plants must be submitted to more air and light, so that they may become thoroughly ripened. Gradually stop watering as the foliage yellows.

PERISTERIA ELATA.—This plant enjoys abundance of heat during growth, but if given too strong a light, the foliage soon shows signs of distress. Plants can be repotted this month in a mixture of fibrous loam, peat, and leaf mould. Drain the pots well, and add broken crocks to the compost, so that the large supplies of water required by the plant when in full growth may pass off freely. The East Indian house, or shady end of the Dendrobium house, will be found a suitable position for these plants.

CATTLEYAS.—Continue the repotting of Cattleyas as they pass out of flower, and start to grow. C. Mossiæ, C. Mendelii, &c., Lælia purpurata, L. tenebrosa, and a long list of hybrids will require looking to this month.

DENDROBIUMS.—A good many Dendrobiums which flower (for Dendrobiums) late in the season will now be requiring attention as to repotting. These will include D. Dalhousianum. This plant enjoys a large amount of sunshine when growing, the leathery nature of the young foliage withstanding more light than, for instance, the nobile section. It requires to be well ripened to flower freely. The compost recommended for Cattleyas in the April Calendar will be found suitable. It is a strong grower when healthy, and will require considerable pot room. D. thyrsiflorum, D. densiflorum, and a good many others may require repotting at this season.

CYPRIPEDIUM BELLATULUM.—This plant is not one of the easiest to grow, and has a tendency to damp, a tendency inherited by hybrids derived from it, especially when small. Plants may be repotted this month in a mixture of fibrous yellow loam, peat, and a little leaf soil, mixed with broken crocks. C. concolor and C. niveum can also be repotted in the same mixture. These two require the heat of the East Indian house, while bellatulum is found to do better in the cooler and more airy conditions of the Cattleya house.

ORCHIDS IN SEASON.

SEVERAL very beautiful Orchids are sent from the collection of Major G. L. Holford, Westonbirt, Tetbury, by Mr. Alexander. Cattleya Gaskelliana Westonbirt var. has rosy mauve sepals and petals, and an orange yellow throat to the lip, surrounded by a whitish zone, the rest being rosy purple. It is very large, and of perfect shape. C. Mossiæ var. Ami-Alexis is a light-coloured form, with crimson streaks and spots on a pale ground, while the Westonbirt var. is rather darker, and has much rich orange and crimson on the lip. Lælia purpurata prætexta is very fine, and has pure white sepals

and petals, and a large, pure white blotch at the apex of the very dark purple lip. Var. Daintiness is not so good in shape or color, but has a much larger white area, running right back into the throat, and veined with light purple. Lælio-cattleya × Canhamiana var. Rex has pure white sepals and petals, like an enlarged Lælia purpurata, and a large lip of the richest purple-crimson, with a narrow white margin—a gem of the first water; while L.-c. × Fascinator nobilior is a noble flower with light magenta-purple lip and blush white sepals and petals. The flowers are all splendidly developed, and are excellent examples of good culture.

Other gems are sent from the collection of the Right Hon. Joseph Chamberlain, M.P., by Mr. Mackay. Lælio-cattleya × eximia is a large and very richly coloured hybrid, in which the best qualities of Lælia purpurata and Cattleya Warneri are combined. L.-c. × Dora is from C. Schrœderæ albens × L.-c. × Hippolyta var. Phœbe, and has salmon-coloured sepals and petals, and a very rich orange throat to the lip. There are two forms of the beautiful Brassocattleya × Thorntoni and B.-c. × Pocahontas, the latter described at page 174 of our eleventh volume. Lastly we may mention Messrs. Veitch's interesting Lælio-cattleya × Mardellii, and a small light form of Odontoglossum × Coradinei out of an importation of O. crispum.

A flower of Odontoglossum crispum Stella is sent from the collection of R. le Doux, Esq., West Derby, Liverpool, by Mr. Davenport. It is a large white form, with rather elongated segments, which have a purple line-like blotch at the base. It is from a small plant, with only three flowers, but the presence of an additional round blotch on the dorsal sepal and two on one of the lateral suggests that it may vary somewhat when the plant becomes strong.

A fine inflorescence of the bright yellow Cyrtopodium Andersonii is sent from the collection of Mrs. T. Fielden, Grimston Park, Tadcaster, by Mr. Clayton, together with a good form of Cattleya Mendelii and Maxillaria grandiflora. The Cyrtopodium is a very imposing plant when well grown, but takes up considerable space, or it would be more commonly grown.

A spike of the interesting Cymbidium Schrœderi, which was exhibited at the R.H.S. meeting on May 1st, is sent from the collection of F. M. Ogilvie, Esq., The Shrubbery, Oxford. It is an ally of C. Lowianum, and is one of Messrs. Sander's Annamese importations. Its history was given at page 39 of our present volume.

A flower of the charming little Odontoglossum Cervantesii punctatissimum, from a recently-imported plant, is sent by Capt. J. B. H. Goodden, Compton House, Sherborne, Dorset, accompanied by a photograph. The flower is prettily tinged with lilac, and spotted with brown at the base of the segments. A photograph of the handsome O. Rossii rubescens is also sent.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during June, on the 12th and 26th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. The subjects for the special competition on the former date are Cattleya Mossiæ and Cypripedium Lawrenceanum, with their hybrids. There will be no special classes on the latter date.

An exhibition of Table decorations, &c., will also be held on Wednesday, June 20th, on which occasion the Committees will not meet. Prizes are offered for a Basket of Orchids, with any foliage, in an open class, and in one limited to amateurs, but Orchids are excluded from several of the other classes.

The next meeting of the Manchester and North of England Orchid Society will be held at the Botanical Gardens, Old Trafford, in connection with the Whitsuntide Show of the Manchester Royal Botanical and Horticultural Society.

THE LAWRENCE MEDAL.—In order to celebrate the completion of the twenty-first year of Sir Trevor Lawrence's presidency of the Royal Horticulturul Society, the Council have resolved to invite the Fellows to subscribe to a fund for the purpose of having his portrait painted by Prof. Herkomer, to place in the Society's new buildings, and also to establish, in perpetuity, a large gold medal to be called the "Lawrence Medal," to be awarded to exhibits of a specially meritorious character. It is estimated that a sum of about a thousand guineas will be required, and the Council hope that Fellows will generously support the movement. Cheques should be drawn in favour of J. Gurney Fowler, R.H.S. Office, Vincent Square, Westminster, S.W., and crossed "London and County Bank."

The last issue of the *Journal of Horticulture* gives an illustration of "Orchids in the Open Air" in the collection of the late Mr. Alfred Smee, The Grange, Hackbridge (p. 449). We had the pleasure of spending a day there some years ago, and saw the plants in their unusual surroundings. They were stored on boards close to the surface of a small stream which flowed beneath the shade of some tall trees, and were chiefly placed there to rest and ripen after making their growths. Few growers have such a situation at command, and we doubt whether the system is of much value in our fickle climate.

The last issue of M. Goossens' interesting little *Dictionnaire Iconographique des Orchidées*, just received, contains figures of the following Orchids:—Brasso-cattleya × Peetersii, Cattleya × Adolphinæ, C. ×

Wincyxiana, Coryanthes maculata, C. speciosa, Cypripedium × Helen ii., C. × Triomphe de Watermael, Dendrobium Kingianum, Lælio-cattleya × Admiral Dewey, L.-c. × Wrigleyi, Odontoglossum crispum Lindeni, Stanhopea tigrina, and Trichosma suavis.

In the accompanying *Chronique Orchidéenne* we observe a note respecting a so-called "error" made in the preceding number in writing Cypripedium Fairrieanum with two "r's," into which others are also said to have fallen. It remarks that the name should be written Cypripedium Fairieanum, because the plant was dedicated by Dr. Lindley to Mr. Fairie of Liverpool. But the error was Dr. Lindley's, for the plant was dedicated to Mr. Fairrie, so that the correction should be the other way about.

A recent number of *Die Gartenwelt* contains a coloured plate of Cypripedium hybrids, with accompanying text (page 386). The four figures are (1) C. Spicerianum × insigne; (2) C. × Leeanum superbum × insigne Chantini; (3) C. villosum × insigne Chantini; and (4) C. Spicerianum × villosum.

A recent issue of the *Gardener's Magazine* contains figures of Cypripedium Hybrids at Westfield (page 301), and a corner of the Cypripedium house at Westfield (page 302).

Oncidium Claesii, Rolfe, is a very striking new species of the Microchila group, discovered by M. Fl. Claes, of Brussels. It has much of the habit of O. macranthum, but the flowers are about the size of O. superbiens, and the petals and lip are deep carmine, shaded with violet, and the sepals bright chocolate red. It will be seen by a notice on another page that plants are now offered for sale.

ORCHIDS AT KEW.

OVER a hundred and twenty species and hybrids of Orchids were noticed in flower at Kew during the past month, and the houses, as usual, have been very gay. Specially interesting is a good pan of the handsome Chilian Chloræa virescens, and a very strong plant of Aerides crispum with two racemes, a good plant of Camarotis purpurea, the brilliantly-coloured Renanthera Imschootiana, and R. annamensis, Rolfe, having smaller orange-coloured flowers spotted with crimson.

ORCHID PORTRAITS.

ARACHNANTHE ANNAMENSIS, Rolfe.—*Gard. Chron.*, 1906, i. p. 290, fig. 118; *Gard. Mag.*, 1906, p. 300, with fig.

BRASSOCATTLEYA × THE BARON.—*Gard. Chron.* 1906, i. p. 281, with suppl. fig.

CATTLEYA LABIATA MRS. FRANCIS WELLESLEY.—*Gard. Mag.*, 1906, p. 303, with fig.

CATTLEYA SCHRŒDERÆ ALBA.—*Gard. Chron.*, 1906, i. p. 300, fig. 122.

CYPRIPEDIUM BELLATULUM.—*Journ. Hort.*, 1906, i. p. 427, with fig.

CYPRIPEDIUM FAIRRIEANUM.—*Gard. Alb.*, i. p. 61, with fig.

CYPRIPEDIUM × LAWREBEL.—*Gartenfl.*, 1906, p. 225, t. 1550.

DENDROBIUM AUREUM.—*Journ. Hort.*, 1906, i. p. 405, with fig.

EPIPACTIS LATIFOLIA.—*Garden*, 1906, i. p. 256, with fig.

HABENARIA BIFOLIA.—*Garden*, 1906, i. p. 257, with fig.

LISTROSTACHYS HAMATA, Rolfe.—*Bot. Mag.* t. 8074.

ODONTOGLOSSUM CRISPUM QUEEN OF THE EARTH—*Gard. Chron.*, 1906, i. p. 209, fig. 126.

ONCIDIUM LANCEANUM.—*Gartenwelt*, 1906, p. 403, with fig.

OPHRYS APIFERA.—*Garden*, 1906, i. p. 257, with fig.

STAUROPSIS LISSOCHILOIDES.—*Journ. Hort.*, 1906, ii. p. 471, with fig.

CORRESPONDENCE.

(Correspondents not answered here may find replies to their queries on other pages, and in some cases, for various reasons, they may have to stand over for a future issue. In the case of hybrid seedlings sent for name, the parentage and history should always be briefly stated, for without these details we are not always able to deal with them satisfactorily.)

F. M. O. A light yellow form of Odontoglossom × Adrianæ, a very variable natura hybrid between O. Hunnewellianum and O. crispum. It should improve greatly as it becomes stronger.

P. R. A heavily spotted form of Odontoglossum × Adrianæ (see preceding note).

H. J. C. Maxillaria grandiflora, Lindl.

E. N. A very heavily blotched and handsome form, which should be taken care of.

E. C. Many thanks. Note next month.

M. de W. Vanda Denisoniana:

E. O. O. Odontoglossum × Coradinei.

H. H. Unavoidably postponed.

N. B. Many thanks. Hope to utilise it next month.

Owing to pressure on our space through the Temple Show several articles and notes are unavoidably postponed till next month.

LYSOFORM.—We have received from the British Lysoform Co. a sample bottle of their new preparation Lysoform, an insecticide, deodorant and disinfectant. It is essentially a 40 per cent. saponaceous solution of formaldehyde, one of the most powerful antiseptics and disinfectants known, being also colourless and non-poisonous. For use as an insecticide, a very dilute solution may be used effectively. It is claimed that a half to one per cent. solution of Lysoform sprinkled among the petals of roses, Orchids or any other plants will immediately cause insects and other pests by which they may be infested to disappear; also that it is an absolute deterrent of American blight, green-fly, thrip, mealy bug, and red spider. The company issue a leaflet on its use in plant life, pointing out that it has proved efficacious in destroying fungoid growths, and in other ways. A non-poisonous substance should possess great advantages if equally efficacious in other respects, and experiments are said to have been made on a large scale.

CATALOGUE RECEIVED.—Catalogue of Brazilian Orchids, &c., from M. P. M. Binot 106, Rue Gallait, Brussels. M. Binot announces his return to Brazil shortly.

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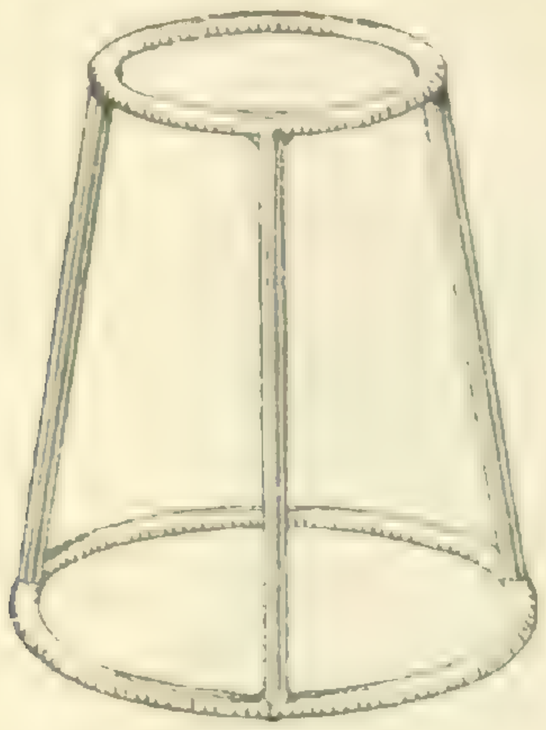

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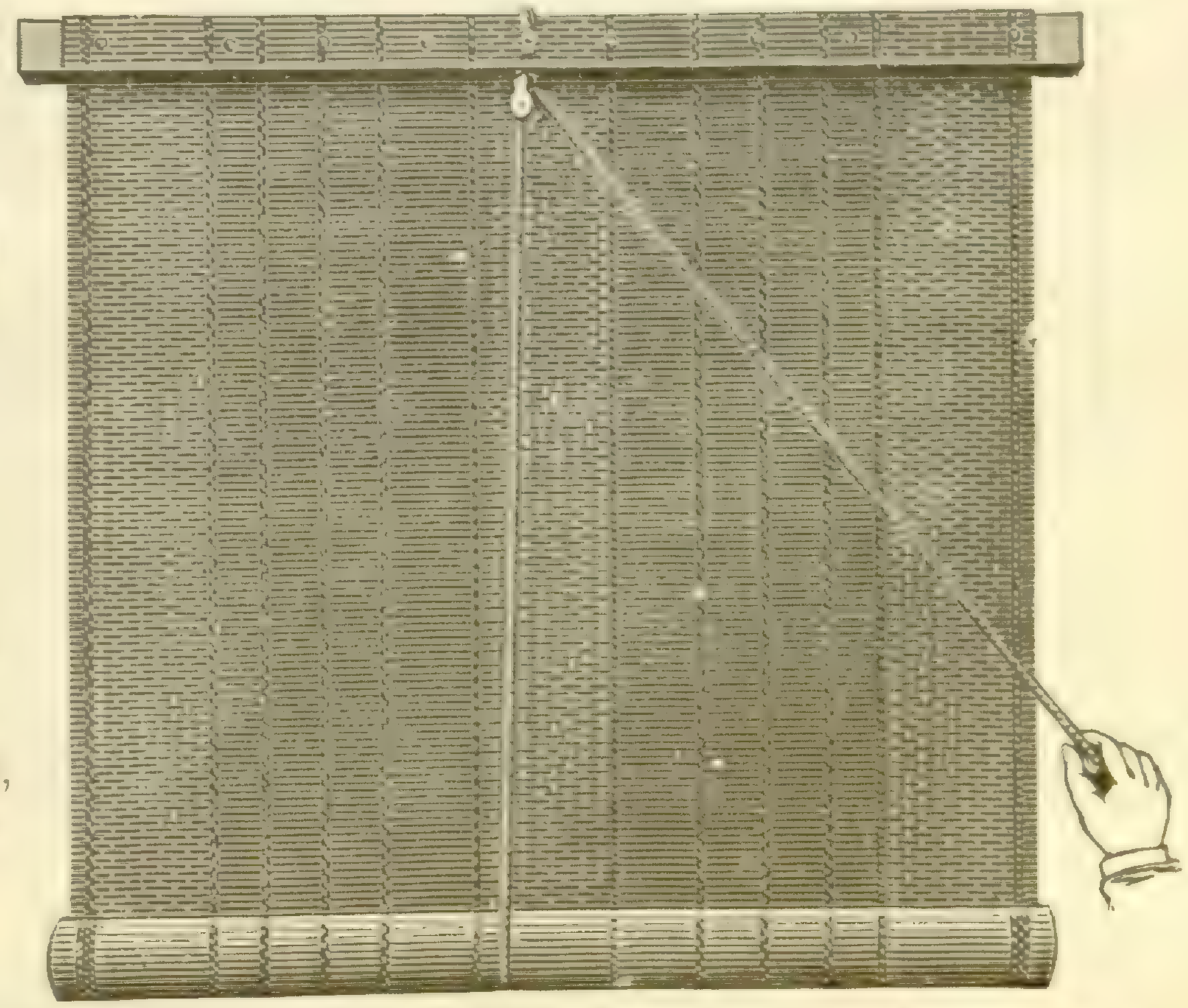

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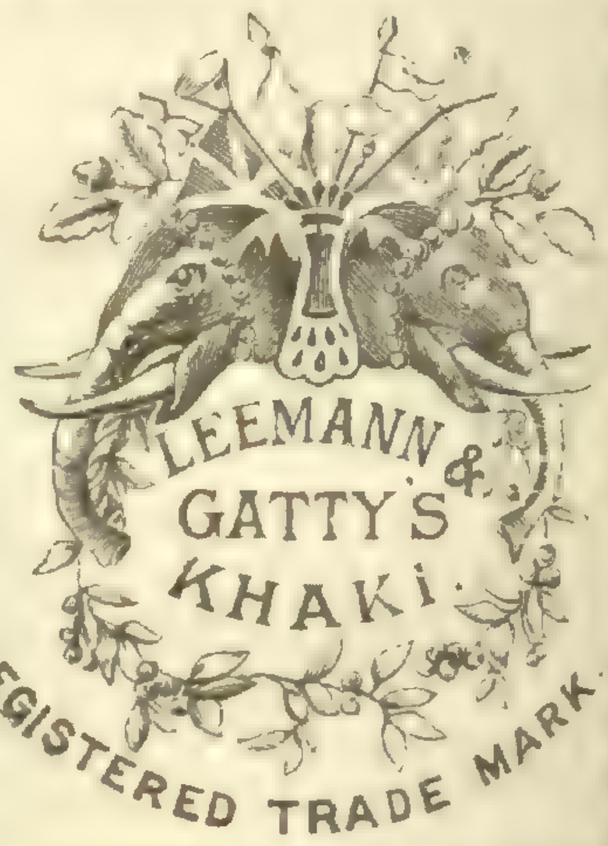

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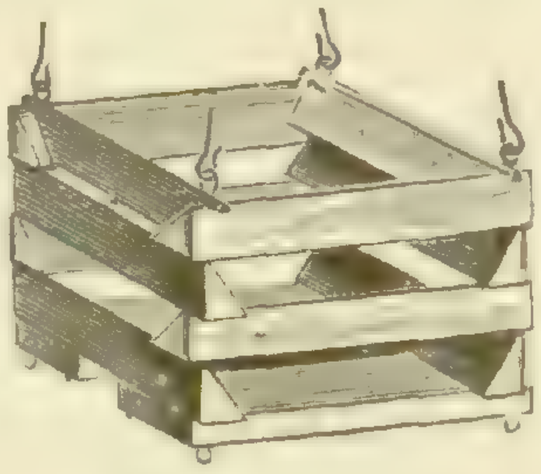

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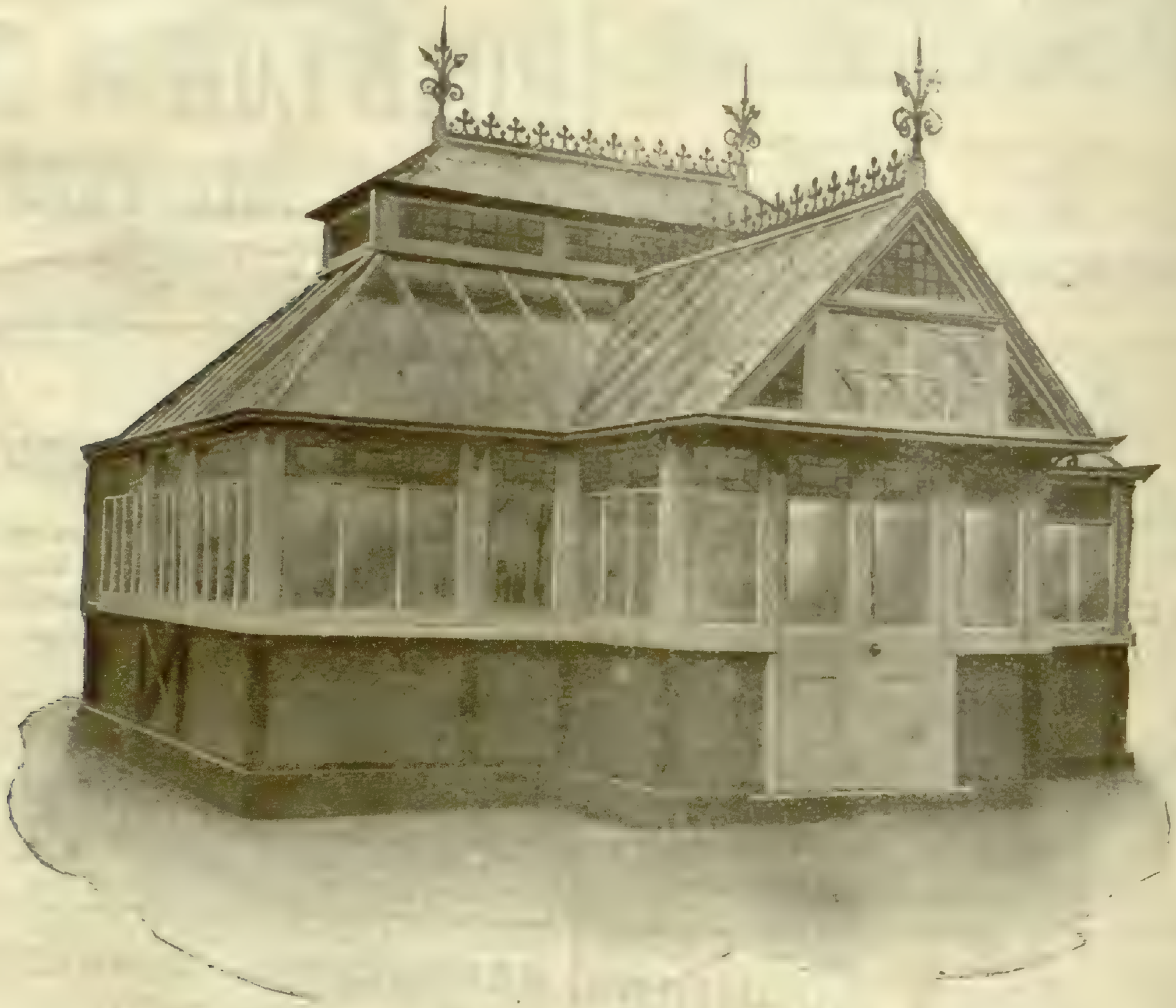

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An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

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VARIATION IN ODONTOGLOSSUM CRISPUM.

UNDER this title Mr. De Barri Crawshay has contributed an interesting paper to the *Gardeners' Chronicle* (1906, i. p. 338), which, at his suggestion, we reproduce here. There has been much speculation as to the origin of the so-called blotched forms of O. crispum, and a few have been already definitely recognised as hybrids, while others have been suspected as such. The appearance of secondary hybrids from O. crispum is likely to throw a flood of light on the question, and three such have already appeared and been figured in our pages. Mr. Crawshay has now tried to trace the geographical distribution of these spotted forms, and the well-known fact that O. Hunnewellianum and O. triumphans, with the hybrids O. × Adrianæ and O. × loochristiense, are not found in the localities whence the earlier importations of O. crispum came is important in this connection. Further evidence as to the precise distribution of the species and hybrids of the O. crispum district would be most acceptable. The following is Mr. Crawshay's article.—ED.

"I have long been considering the sectional distinctions of the enormous number of named varieties of this species. Every year they become more linked up by the appearance of new forms of this complex plant, for since the gigantic importations of recent years from newer districts, the variation in the spotting is seen to be more marked and in itself more varied than it was in the 'eighties and early 'nineties. This has resulted from spotted forms coming from the district where O. Hunnewellianum and O. triumphans represent the brown and yellow species that are the equivalents of O. luteopurpureum and of O. gloriosum in the 'Pacho' districts.

"Primarily, the districts themselves from which the plants come are widely separated and can be sectionised, for Fusagasuga, La Vega, Pacho, San Cayetano, Chiquinquira, and Velez are all far enough apart to constitute ample difference in the general type of the crispums from each place, resulting from natural circumstances. I take these names as indicating the districts, but, of course, the area is much larger than is

ordinarily implied by the name of the town more or less in its centre.

"It is easier to commence by clearing away the negatives first, and so Pacho may at once be written off as a crispum-producing area to-day; but it has two extended ends; to its S.W., La Vega, which sends its supplies to Facatativa, and to its N.E., San Cayetano. From both these districts come fine forms of crispum, agreeing in all respects with the grand, heavy flowers known in the 'seventies and early 'eighties as 'O'Reilly's' and St. Albans varieties, which produced such fine round flowers as 'The Duchess,' for which Sir Trevor Lawrence paid, on November 16th, 1882, forty guineas for 'half the plant'; apiatum, whose history is already well-known; Ballantinei, Hrubyanum (by the way, where is this fine thing now?), Sanderianum, Thompsonianum, Veitchianum, and Baroness Schröder. The crispums emanating from this district that have too large a proportion of luteo-purpureum influence in them to permit them to be called true crispums are Alpha, Cooksonianum, Evelina, nobilius, pardalinum, Princess Christian, Schröderianum, Stevensii, The Earl, and Wolstenholmiæ.

"La Vega has carried on the high character of Pacho, and produced such fine forms as Cooksoniæ, Franz Masereel, Pittianum, and Seraphim.

"San Cayetano has done its share also, in furnishing Abner Hassall, de Barri, Persimmon and Donovan.

"When we get to Chiquinquira the type of crispum pure and simple becomes quite changed; the numerous spotted varieties are not of such grand form and size as those above-mentioned, but occasionally among them comes a really fine massive bloom. This is very difficult to account for on natural lines, but there are many ways that suggest themselves to an expert in these matters. In this district the innumerable forms of Adrianæ appear, and, of course, the continual intercrossing by the agency of insects has produced such an interminable chain of links that it has become difficult to say what is crispum and what is Adrianæ, for each has many points in common with the other. Scores of 'yellow crispums' appear in these importations, but the yellow disappears in a few days, leaving a dirty white, sometimes called 'creamy,' sometimes not even the dirty white. There can be no doubt that a crispum having yellow in it, even though fugitive, cannot be a crispum pure and simple. It is impossible for a crispum to possess the attributes of the various species growing with it and be a true crispum at the same time. This statement has a direct bearing upon many varieties called crispum, but which are no doubt crosses between a crispum and an Adrianæ.

"It is hardly worth while discussing the crispums from Velez; it will suffice to say that they are small and worthless. No one who has any regard for his reputation or the satisfaction of his clients ever sends them out of the district.

"The five brown and yellow species are grouped differently in the various districts. I, therefore, give a comparative synopsis, arranging them in the order of their preponderance :—Fusagasuga, Lindleyanum, gloriosum, luteopurpureum; Chiquinquira, Hunnewellianum, triumphans, Lindleyanum, luteopurpureum. It is manifestly impossible to say these are exactly relative quantities, but they are roughly correct, it being also inferentially proved by the hybrids resulting from the importations.

"There is one other factor in Nature's creation of blotched crispums which may have played a very important part : that is the variety roseum. The prevalence of roseum is greatest at San Cayetano, becomes less at Fusagasuga, Pacho, La Vega, Chiquinquira, and least at Velez.

"In 'Pacho' and 'Fusagasuga' days we had only crispums which at times showed characters of luteopurpureum or gloriosum or Lindleyanum. Alpha, Stevensii, Cooksonianum, leopardinum have evidence of luteopurpureum; the last has so much in it that it is an admitted Wilckeanum, and Stevensii will ere long be so-called, and I doubt not that the hybridist will prove several others to be in the same category.

"When Chiquinquira was drawn upon, the innumerable varieties began to appear, and that complex thing, a spotted crispum, spread out in all directions towards the five brown and yellow species that grow amongst it in this district. Adrianæ caught us napping, or, rather, not awake, and when 'loochristiense' came we did not quite understand it, though we did not all consider it an 'excellens.' Henceforward scores of spotted forms kept cropping up, ranging over a wide area of variation and arrangement of markings. It is quite easy in the clearest of these to recognise their descent by the difference of colouration, the shape, and position of the spots.

"In this group there are great numbers of so-called crispums that I have not a shadow of a doubt are crosses between crispum and Adrianæ; they will ultimately be relegated to O. Fascinator, which has been raised artificially. They comprise Ami Charles, Kegeljani, tesselatum, Whateleyæ, Confetti, Duke of York, Prebendary Bevan, The Kaiser, besides many named forms in collections.

"It will be seen in the above 'crispums' of each section I have mostly named those certificated by the Royal Horticultural Society, as they are more widely known, and also because they have had their portraits painted for that Society's collection, and are therefore easy of reference; but there are many more that could be added, though the above suffice, and their origin as to district is in most cases indisputably known to the writer.

"At the present time the evidence shown by the garden-hybrids has not thrown very much light upon the imported plants, but as more results bloom, the facts will become clearer, and in most cases there will be but little doubt left.

"O. × Fascinator (crispum × Adrianæ), raised by Mr. Charlesworth, and O. × Stewartianum (Andersonianum × crispum heliotropium) raised by Mr. Stewart, have already proved the Adrianæs and Andersonianums that looked much like crispum to be crosses between the hybrid and the parent species, and many others will follow to add further proof thereon, as well as in analogous cases.

"It has already become very difficult to lay down a hard and fast rule, and when experts disagree, who can decide whether a plant is a crispum or an Adrianæ or a crispumish Adrianæ, otherwise now a Fascinator?

"I have known a discussion arise as to the status of a plant when experts disagreed as to whether it was a garden hybrid or an imported plant, and also whether it was a crispum or a hybrid. I have long since placed many varieties in this section; now we have absolute proof of it. The same remarks apply to Andersonianum and Coradinei, among which despised hybrids there are a few that are fine ones; these, no doubt, are the result of blotched crispums crossed with the original hybrid.

"The following varieties of Andersonianum may be separated as 'Stewartianums':—Bogaerdianum, Crawshayanum, obstupefaciens, Pollettianum, and Youngianum.

"The varieties of Coradinei that come under this rule are:—Crawshayanum, mirabile, Mrs. de B. Crawshay, and Theodora. I mention this last variety in my own collection, though it has not yet been shown, but those who have seen it pronounce it indisputably a cross between a blotched crispum and O. Coradinei, and as it bears distinct evidence, I quote it in support of my argument.

"Reviewing the matter quite dispassionately, I do not think that things are as clear as they would be if all would do their best to clear the air of many doubts, to use no stronger word."—DE BARRI CRAWSHAY.

INDIVIDUALISM AMONG ORCHIDS.

(*Concluded from page* 166.)

WE went next to Mr. Charlesworth's. We had anticipated our visit here with keen pleasure, and the result more than justified our expectation.

One often has the question put by outsiders, "Where do Orchids come from?" In answering now, besides giving the ordinary geographical areas, one will have to add "and England."

Here is a veritable seedling land; thousands and thousands of them; and looking as healthy and happy as possible. Mr. Charlesworth is raising the Odontoglossums as freely as the Cattleya and Lælia seedlings; and this wonderful success is no chance matter either, but is the outcome of years of study and experiment—adding knowledge bit by bit, gaining new

light even from failures—till now the question is not *how* to raise but *what* to raise, to get the best possible results.

Mr. Charlesworth was good enough to give us the outline of some possibilities he has in view. For instance, one Odontoglossum hybrid of his own raising will shortly be in flower; this he intends recrossing with a very fine variety of one of its parents, and he expects to obtain from this second cross a flower that has hitherto been regarded as a species. We had the same *result* in mind, but intend working in a different way, namely, by crossing the accomplished fact with itself. Possibly we shall obtain the same thing—possibly not—but his, although the longer, is the more useful way, because, if his idea is correct, he will prove the origin of this so-called species, which would be a very great advantage.

Mr. Charlesworth is a real enthusiast, and seems to find great pleasure in his work, a pleasure easily understood, especially as it is crowned with such success.

In going to Mr. MacBean's we knew what to expect—we had been before. Fine growths, fine bulbs, fine spikes; in fact the growth is so exuberant that the plants seem to break double, and break back in a most desirable way, and from sheer love of growing, as though their great vigour could not find vent in one lead only. I think *some* of this success is due to careful potting with good lasting material, so that frequent disturbance is not necessary, and keeping the plants in comparatively small pots. There can be no doubt as to the impression left from a visit here, and an Orchid lover could have no greater treat than a walk through these houses.

Mr. Bolton is the fortunate possessor of plenty of space for his plants, a thing that a good many of us are suffering from the need of.

He has a large number of houses, and very conveniently arranged, the most of them running right and left of a corridor. Those occupied by Odontoglossums seem to be supplied with more than the usual amount of ventilation; they strike one on entering as being so very fresh and airy. The stagings, too, are very low, and one seems to be able to look down on to the plants. I believe Mr. Bolton imports a great many of his own Odontoglossums, and the type seems distinctly good, for we saw some distinctly good shaped flowers open on plants flowering for the first time; and, besides, one of the grandest known crispums flowered out of his plants and was named after him. We saw some splendidly-grown Miltonia vexillaria, and some Cattleya gigas in the pink of condition, and breaking very strongly. Cypripediums are great favourites of Mr. Bolton and he has specialized in the albino varieties, increasing his stock largely by division, but also by raising from seed obtained by self-fertilization.

In looking back on our visit to Mr. Crawshay's collection, several things stand out, one being the great number of plants he manages to get into

each house, he having them not only on the ordinary stagings, but on shelves at the back, and hanging all over the roof. Another is the very fine growths and spikes he obtains there, and last, but certainly not least, his marked success in raising Odontoglossum seedlings.

He has them in all sizes, from the tiny ones first germinating up to flowering stage. As is well known, Mr. Crawshay has made a special study of the distinctive feature of Odontoglossums, and having hundreds of dried blooms in a wonderful state of preservation he has exceptional opportunity for this work. In many cases he has the flowers of the same plant kept year by year, so one can see at a glance the range of alteration in the size of the flower and its markings as the plant has been stronger or weaker. A look through these flowers is an education in itself, and a talk with Mr. Crawshay on this mutually interesting subject always means something fresh to think about.

EMILY THWAITES.

ORCHID-GROWING IN THE TROPICS.

(*Concluded from page* 67).

The spring of 1882 found me in New York just at the period of the glut in the Orchid market, a time when valuable Orchids brought very low prices, and at times could not receive even a bid at an auction. It was a favourable opportunity to take to Brazil many East Indian Orchids. I saw no reason why they should not succeed, but as in Para there was not to my knowledge a single Orchid not Brazilian, it was an experiment. I sent to Para many Dendrobiums, Vandas, Aërides, Cymbidiums, and also more common East Indian Orchids; also many Cattleya Mossiæ, Dowiana, and Mendelii, and other American Orchids not indigenous to Brazil. These were dry auction-imported plants bought for a trifle, but they have generally done well and are becoming established, with the exception of Cattleya Mossiæ, of which the losses have been large, the unusual rains of the last winter having rotted the young growths.

PHALÆNOPSIDS.—These charming plants have always been favourites with me, as with every lover of Orchids. I have never been a believer in the Russian bath treatment of Phalænopsis, and, though accustomed to a moist, tropical climate, I never enjoyed the temperature of a Phalænopsis house, but I had always believed, in common with all cultivators, that these plants required a greater quantity of moist heat than other Orchids. I believed that if the plants survived the ocean voyage, it would only be to die in Para, as I have no conveniences of a greenhouse or any place which I would consider suitable for growing them, and the idea of Phalænopsis as basket plants on an open piazza would, if indeed it had suggested itself to me, have been considered to be almost absurd. A little, clay-barred basket

of Phalænopsis rosea given by a friend I accepted, however, by way of experiment. It was wrapped in cotton wool and put in one of the boats on board the steamer, on the deck. The canvas cover of the boat was thrown off every fine day, and plenty of light and air admitted. The foliage turned a little yellow, but the plant arrived at Para, after a long and at first very stormy voyage, in good condition. Plants of Phalænopsis amabilis and Schilleriana were also in the boat, but in a tight-closed case with other Orchids. Both were nice, healthy young plants on blocks. On opening the case in Para, both came out in healthy condition. The question then was, what to do with them? As the best treatment, the blocks with the two plants were placed in baskets filled with rough charcoal and sphagnum moss, and the three Phalænopsids were hung under an easterly piazza, where they had a full light and direct sun for about an hour in the morning, but not where the wind could blow heavily on them. Daily I looked at them, expecting to see them grow sickly and die. Instead of this, Phalænopsis rosea soon regained a healthy, green colour and showed a strong flower-spike, and the other two began to make new roots, which were soon followed by a new leaf on each. This was early in October, 1882, and by 1883 the plants had doubled in size and Phalænopsis rosea had been in bloom for five months, with two spikes of flowers. The plants never had any protection day or night. The treatment was a syringing about seven o'clock each morning, which was omitted if the sphagnum appeared moist. October, November, and the first part of December, 1882, were months of unprecedented dryness in Para. Instead of an almost daily shower, no rain fell, and the air, usually moist, was very dry. The daily afternoon rains began about the middle of December, and until May the rainfall has been unusually great. The plants have thus experienced the two extremes of excessive drought and unusual moisture in the air. I am unable to perceive that this change had had any effect upon them. The temperature of Para varies from 78° to 85° in the shade. Rain occurs usually every afternoon, often only a slight shower, but the mornings are always bright. The evenings, after the shower, are usually bright and still, though this past winter there have been many cloudy and some rainy nights. There is generally a cool, fresh breeze blowing during the day, but tempests, tornadoes, and such beatitudes of a temperate clime are unknown. About April 1st I was obliged to move from my house to one which had no open piazza for my Phalænopsids. As the rains were excessive, I was afraid to put them out under trees with other Orchids, though Aërides, Vandas, and Saccolabiums were there doing well, and making wonderfully strong, healthy growth and roots. The only place that offered was a shelf outside a north-west window. There the three baskets were placed, and not even hung up, as I had my doubts as to the suitability of the

place. The second day the strong afternoon sun, which rests for two hours directly upon the plants, burnt a large hole in the largest leaf of Phalænopsis Schilleriana, but the other plants received no injury. The plants receive more or less rain with every shower. Two months have now passed, and the plants remain in the window. The treatment is, if dry, to give them a little water in the early morning. They all show dark, healthy foliage, and the markings of the leaves of P. Schilleriana are remarkably bright. Messrs. Low's collector, who saw the plants a few days ago, said he had never seen three more healthy Phalænopsids. P. Schilleriana and rosea, in the last two months, have each made a new leaf and three new roots, and P. amabilis a very large leaf, four very strong new roots, and is pushing a very strong flower-spike. What shall we say? Is the experience of eight months too little to thence deduce the practicability of growing Phalænopsids as basket, piazza, or window plants in Para? Can we not rather reasonably conclude that Phalænopsids are much more hardy than is generally supposed, that steam bath culture is a mistake, and that the plants with less heat and moisture would succeed, and, perhaps, do better and be more healthy?

ODONTOGLOSSUM HABITATS.

IN further elucidation of the point raised at p. 127, I can state that the hybrid between Odontoglossum Hunnewellianum and a form of luteo-purpureum, is in existence. It bloomed in the collection of J. S. Moss, Esq., Wintershill Hall, Bishops Waltham, this spring. I saw it, and have no doubt as to the luteo parentage, but it would be difficult to state definitely if it was Hunnewellianum or Adrianæ.

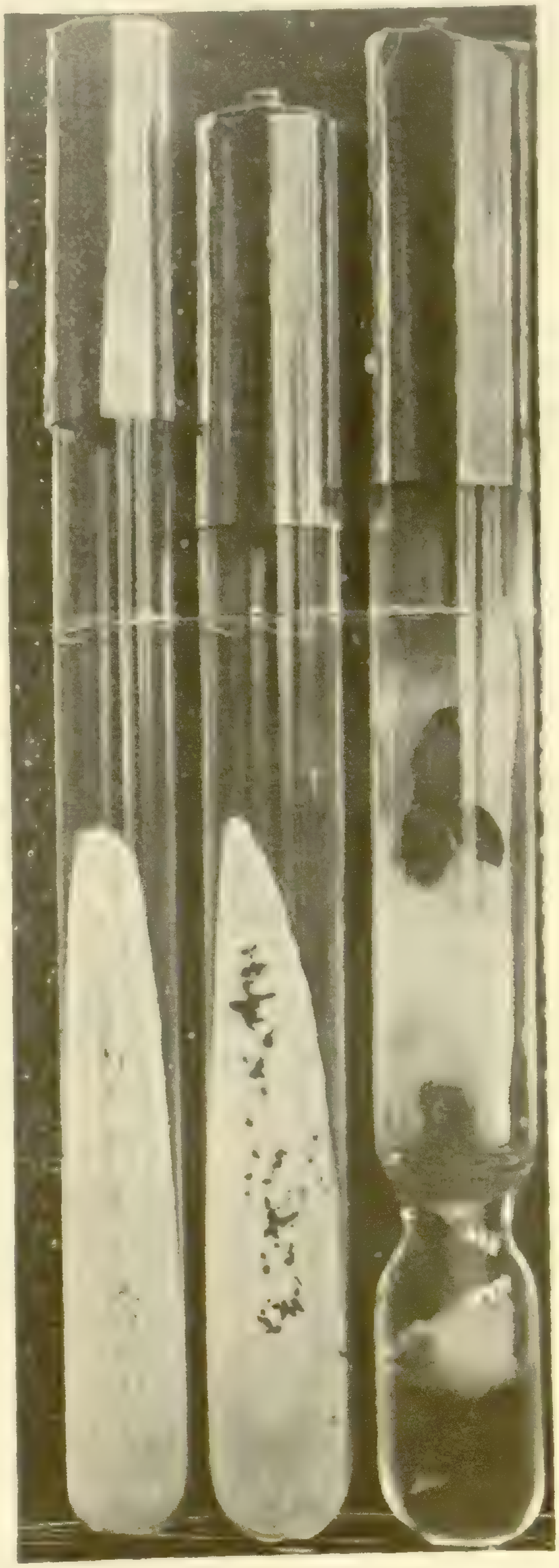
In reference to M. F. Claes' note at p. 167, I have bloomed O. luteo-purpureum out of his importations, *once*, from plants bought of him between September 15th, 1899, and April 24th, 1900. I have this plant still, and am absolutely certain of its origin, as I am most careful as to my system of labelling and recording my purchases.

He also bloomed O. × Wilckeanum Mme. F. Claes, which he showed at the R.H.S. as a crispum on June 19th, 1900, but which he subsequently sold as a Wilckeanum, which it undoubtedly was.

It would be interesting if M. Claes could state where the importations came from, out of which I bloomed luteopurpureum and he bloomed Wilckeanum; whether they came from the "new districts where the large blotched forms of crispum" come from, or not. Of course, we cannot expect him to publish his localities in detail, but he could, perhaps, give sufficient indication to locate them upon a map as distinguished from "Pacho" or "Velez." It would supplement my article in the *Gardeners' Chronicle* for June 2, 1906 [reproduced at p. 193.—ED.].—DE B. CRAWSHAY.

FUNGUS CO-OPERATION IN ORCHID ROOTS.

THE May number of the *Orchid Review* contains, under the title "Fungus Co-operation in Orchid roots," an article in which are discussed my researches on the germination of Orchids and, in particular, Odontoglossums (p. 154). I am pleased to send you a photograph showing the results of my experiments in this subject.



The culture tubes represented in the photograph (fig. 24) are ordinary glass tubes, closed by a plug of cotton-wool and covered above this by a cap of tinfoil, so as to render impossible the entrance of moulds or other micro-organisms. These tubes have been sterilised by heat before making the cultures.

The left-hand tube contains seeds of an Odontoglossum which had been sown aseptically, without any other growth, on the inclined surface of the whitish nutritive jelly occupying the lower part of the tube, and had remained for a period of four months. These seeds have simply turned green and swollen slightly, but they have not otherwise developed, and they are in the photograph only distinguishable as points on the wet surface of the jelly.

The second tube contains a culture made in the same way with the seeds of the same plant, but which has been inoculated for two and a-half months with a fungus found on the roots of Odontoglossums. The fungus has developed, forming on the surface of the nutritive jelly a delicate net-

work (invisible in the photograph), and it has also affected the seeds, for one can see well that all these are germinating in a regular manner, and contrast by their development with those in the neighbouring tube.

In the absence of the fungus, the seeds, even after six or seven months of culture, are still in the same condition as is seen in the first tube. In the presence of the fungus, on the contrary, they prosper and develop quite regularly.

The third tube shows up to what point the culture of young Orchid plants may be pushed under these experimental conditions which I obtain. The seedling in question is a Phalænopsis, coming from a seed sown seven months previously on a piece of cotton wool, dipping at the base into a nutritive liquid. In this case also, the development cannot be obtained except in the case of a suitable fungus. In the photograph one can see a part of the mycelium of this fungus, which forms a whitish mass submerged in the liquid in the lower part of the tube. The plant is about the middle of the tube, and the best leaf, it will be seen, is three-eighths of an inch long.

Is the absence of the fungus as indispensable for germination of seeds in glass houses as it is in my culture tubes?

This appears to me to be quite incontestable, for I have always found fungi in the young seedlings which cultivators have sent me, as well as in the young seedlings of Orchids collected in their native homes. Again, why do some cultivators easily get their Odontoglossum seeds to germinate, while others are disappointed by their poor results? In my opinion it is because suitable fungi to bring about the germination are not found in all houses. In fact, to bring about the germination of Odontoglossums it is necessary to have present a certain species of fungus, for the fungi which succeed well in the case of Cattleya, Cypripedium, &c., do not work at all in the case of Odontoglossum. Again, the activity of the fungus of Odontoglossum is very variable, and the cultures which I have obtained at different times (from the roots of different Odontoglossums) have shown a very unequal amount of activity. Some brought about germination with more or less rapidity. Others, although they were identical in appearance, had no appreciable effect.

I do not doubt that one could, in time, and with appropriate methods, obtain extremely active cultures of these fungi. It would be sufficient to propagate these cultures so as to give to all cultivators facilities for germinating Odontoglossum seeds as readily as those of Cattleya. That, however, could only be the work of a laboratory specially fitted out for the study of these questions, and I am strongly of opinion that Orchid amateurs will one day see the utility of a suitable laboratory for such horticultural research. Assuredly, if this laboratory did exist, it would not be in a condition to solve to-day or to-morrow all the problems that underlie the

delicate culture of Orchids. After seven years devoted to the study of this subject, I hope at least to have fixed the principles which are to be applied in order to attain rapidly to the solution of these practical problems.

NOEL BERNARD,
Maître de conférences à la Faculté des Sciences
Caen (Calvados) France.

CALENDAR OF OPERATIONS FOR JULY.

By J. M. BLACK, Streatham.

THERE was once a time that between the spring and early summer-flowering Cattleyas and Lælias and those that flower in the autumn a gap existed, but this gap has in recent years been filled up by hybrids between the late-flowering and early-flowering species. The long-bulbed, summer flowering section of Cattleyas has been most useful for linking up the two. We have now a series of hybrids following each other in flower throughout the summer, and practically unbroken throughout the whole year. Those hybrids which have for one of their parents C. Loddigesii, C. Leopoldi, C. granulosa, C. bicolor, or any other of the diphyllous, long-bulbed group of Cattleya, finish their pseudobulbs and flower straight away, with hardly any waiting in sheath; but that is no reason why some little difference should not be made in their treatment at this period. When we are satisfied that the pseudobulb has made sufficient progress, which, in most cases, will be when the base of the sheath can be seen, a modified ripening up process may commence. It would be difficult to say off-hand what the optimum growing conditions of these plants are, but we can safely assume that a lower temperature, more light, more air, and less moisture, both atmospherically and at the root, than go to make up these conditions will be best suited for flower production. Although we know perfectly well that the closing up of the houses in the afternoon gives an impetus to growing plants, we cannot imagine it being good for the plant which wants its energy for the building up of its inflorescence. At this period it would seem reason to suppose that the plant does not want further inciting to vegetate, but instead wants putting into training, to use a sporting phrase, for the effort which is awaiting it. All gardeners know that forced flowers have not the colour and texture of those allowed to mature naturally.

When the sheath is well up I should advise that the plants be removed to one end of the house, so that they can receive more air, and, in conjunction, more sunning; they should at this stage be flooded with as much light as the foliage will stand. By this means the tissue will become firm and ripened, and good blooms will follow. To ripen the plant after it has flowered will be locking the stable door after the horse has been stolen. It

is most difficult in a house containing plants of different natures and at different stages of their growth to give all fair treatment, and while we may all know what is good practice, most of us know how difficult it is at times to put it into execution. To raise plants in sheath above the others will give them more airy surroundings, but the complete solution would be to place them together away from actively growing plants, so that they could be treated separately. If our summer was twice as long and more to be relied upon, we could give the plants longer to grow, and the optimum growing conditions would not have to enter so much into our calculations.

POTTING.—It has been to me something of a problem to know the best time to repot these Cattleya hybrids which flower during late summer. Root-action continues after the blooming period, although no new growth appears until next spring. It seems to me that those plants which flower up to the end of September should be repotted after flowering. These long-bulbed Cattleya hybrids grow very quickly. C. × Atalanta will start to grow in April, and show the sheath by the end of May. By the middle of June the sheath will be right up, although the leaves will grow and the bulbs lengthen and thicken after that. To repot this plant in April would be manifestly unreasonable, as it would have to re-establish itself, make its growth, and flower, all within a period of, at the most, five months. If this plant be repotted on flowering and carefully watered, it will re-establish itself quickly, and the autumn-made roots will not get torn away from the pot at the very time that the plant has particular need of them. We do not like to see Cattleyas flowering and making a new pseudobulb at the same time, but it is not unusual in favoured localities for Cattleya Trianæ to make up a pseudobulb quickly in the beginning of the year and flower simultaneously with the one made normally the previous summer. I have seen Cattleya Mossiæ flowering and showing the sheath in the growths for next year's blooming. In a case of that kind one must wait until the bulb is finished and repot (if necessary, of course) when rooting from the finished bulb. This is better than disturbing the plant when right in the midst of its growth. C. Mossiæ and the early-flowering species can safely be repotted when the flowering bulb for the next spring is completed in sheath, if the next growth is too far advanced to be deemed safe for a shift when the plant has flowered. But I might say, *inter alia*, that this impulse to get on has not been a source of concern at Streatham. A fog which leaves a deposit in your nose, and which makes your eyes smart—which coats the glass like pitch, and takes the leaves of the geraniums now and then during the winter, curbs any plantine frolic of this kind in the spring-flowering Cattleyas.

COCHLIODAS.—Since the appearance in 1904 of Odontioda × Vuylstekeæ, Cochliodas have been very much in demand by raisers, occupy-

ing that place among Odontoglossums that Sophronitis grandiflora does among Cattleyas, and we may look forward to seeing in time in general cultivation a series of lovely hybrids between them and the Odontoglossums. C. Noetzliana is the best of the genus, and then come C. vulcanica, the only other two in cultivation, I believe, being C. rosea and C. sanguinea. When strong they last a long time in flower, the bottom flowers fading before the top ones are open. A plant of C. vulcanica was quite ten weeks in flower at Chessington this season. The culture is practically the same as that afforded to Odontoglossum crispum. They should be potted in the compost recommended for Odontoglossums, in particularly well drained small pots or pans, when the new growth is an inch or two high.

CALANTHES.—These plants are now well advanced, and the pots being well filled with roots, they will require abundance of water. They will benefit by being watered once or twice a week with weak liquid manure, or, if that is not procurable, with some other fertilizer; but the extent to which feeding may be done will depend on the nature of the loam in which they were potted. They require abundance of light to ensure ripening.

ONCIDIUMS.—Oncidiums generally, and particularly those of the crispum section, deteriorate quickly if not treated with much discretion. The pseudobulbs are usually small in comparison to the size of the spikes they throw up, and the plant is in danger of being drained if the spikes are allowed to remain on for long. On flowering, these cool-growing species require a long rest in comparative dryness, but when growing and developing their spikes, which in some cases, such as O. macranthum, are a long time on their way, they require large quantities of water, and the compost must in consequence be of an open and good lasting character.

SOPHROCATTLEYAS AND SOPHROLÆLIAS.—We have a nice little collection of these elegant and brilliant hybrids, which, from the difficulty attending their raising, are likely to remain very scarce. They grow best with us in the Cattleya house, in pots of limited dimensions, and in the compost recommended for Cattleyas. Cattleya treatment generally suits them, and they are really very satisfactory growers, once they have attained a certain size. We potted those of flowering size this spring particularly firm, surfacing with peat, with just an occasional tuft of moss. I think this suits them better than an all-moss surfacing, as the roots get more air, and the water passes through more freely, and, although the Sophronitis parent is usually regarded as a rather shade-loving plant, we find these hybrids enjoy a large amount of sunshine.

SEEDLING ORCHIDS.—Seed sown in spring will now be germinating, and in some cases it may be advisable to transfer the larger to other pots. There is a little grub which makes its appearance in the compost, and which has accounted for a good many seedlings in the germination stage. When

this pest appears one is sometimes constrained to prick off sooner than would otherwise be the case. If the seedlings are not being eaten, and are otherwise progressing, leave them alone as long as possible, as they will make much more rapid headway than if changed. This is one of the things that are difficult to account for, but it may be supposed that the hairs which spread out from the seed before the root makes its appearance, excrete some substance which renders the required constituents soluble, in the same way that roots are said to do, and when the seedling is laid on fresh material it has to wait until it has got these constituents into a condition fit for absorption. At any rate the fact remains that when these tiny rootless seedlings are removed, they leave some fostering agent behind.

Routine work was dealt pretty fully with last month.

THE HOLIDAY SEASON.—I may be permitted to remind forgetful people that we are now in the midst of the holiday season. No one is more deserving of, and no one will benefit more by, ten or fourteen days' change than those employed among the Orchids. This is hardly calendarial, but I should have no difficulty in associating the two. This holiday is not a favour nor a concession, but a right, and the giving of it a duty, and in every establishment it should be possible to arrange matters as soon as the busy season is over.

OBITUARY.

REGINALD YOUNG.—It is with deep regret that we have to announce the death of this well-known Orchidist, which took place at his residence, 3, Linnet-lane, Sefton-park, Liverpool, on June 7th last. The deceased gentleman, who was 62 years of age, has been a victim to diabetes for some considerable time, and the malady which brought about the end, after some six weeks of suffering, was one of the sequelæ often associated with this disease. He was interred at Smithdown-road Cemetery on Saturday, June 9th.

Mr. Young has been an enthusiastic cultivator of Orchids for about a quarter of a century, and of late years has devoted himself largely to Cypripedes, in the raising of which—with the assistance of his able gardener, Mr. Thomas J. Poyntz, who has been with him about twenty years—he has been very successful. We had the pleasure of visiting him in 1899, and gave an account of the collection (*O.R.* v. pp. 275-277), when we wrote:—"The Cypripediums, however, are Mr. Young's special hobby, and of these he has a fine collection, besides hundreds of his own seedlings, in all stages from the tiniest seedlings up to those that have reached the flowering stage. These belong to upwards of 150 different batches, raised between 1892 and 1898, and some good things may be anticipated during the next few years. Mr. Young has recorded all his crosses in the most careful manner, and further has the most complete list of hybrids of this group from all sources

that we know of, as he keeps all the additions posted up as they appear in a thoroughly systematic way. The importance of such records can hardly be over-estimated, and we had great pleasure in looking through them." The work, both of seedling raising and of posting up the records, has been continued, and now form a remarkable series. The collection, we believe, is to be dispersed, but we cannot help hoping that the unique collection of records will be preserved intact, as a memento of Mr. Young's activity and enthusiasm. A copy was given to the Royal Horticultural Society some few years ago.

Our pages contain many records of Mr. Young's work, as well as some very interesting papers from his pen, and his friend, Mr. F. H. Moore, of the Royal Infirmary, Liverpool, to whom we are indebted for part of the above information, writes:—"The pages of the *Orchid Review* were a favourite medium for giving others the benefit of his experience, and Mr. Goossen's *Dictionnaire* was enriched with many drawings and flowers from his collection."

A summary of Mr. Young's work would be very interesting, but we cannot attempt it now, though we may mention his papers on Cypripedium Hybridisation (*O.R.* iii. pp. 201-202), An Ideal Cypripedium List (*l.c.* p. 330), and Complex Cypripedium Hybrids (iv. pp. 361-362), as instances of the thoroughness of his work. And the history of his successful attempt to prove the parentage of the natural hybrid Paphiopedilum × siamense, as given at pp. 44-46 of our eleventh volume, will be historical. Mr. Young's name is commemorated by the handsome hybrid Paphiopedilum × Youngianum, raised by Messrs. Sander from P. superbiens and P. philippinense. Mr. Young's death is a great loss to Orchidology, and many will regret that he was not spared to see more of the results of his long series of interesting experiments. We hope that whatever may be the fate of the collection, the origin of the numerous unflowered seedlings will not be lost sight of, as some good things are likely to be found among them.

PAPHIOPEDILUM × MAUDIÆ.

A FLOWER of a fine hybrid between Paphiopedilum Lawrenceanum ♀ and P. callosum ♂ has been sent from the collection of J. Leemann, Esq., Heaton Mersey, near Manchester, which carries the curious question raised at page 125 a step further. It may be briefly described as a fine coloured P. × Maudiæ, using that name in its original significance, as an albino hybrid from two albino parents. The flowers of the two species, as is well known, differ chiefly in shape, P. Lawrenceanum having nearly straight horizontal petals, while in P. callosum they are half drooping and falcate. The hybrid clearly combines the characters of the two parents, but most

resembles the latter in shape. The dorsal sepal is nearly three inches across, with other parts in proportion, while the colour is too similar to that of the parents to need description. A note on the variety Amy Leemann appears on page 125.

GOMESA SCANDENS.

THIS very distinct Gomesa differs from all others in its elongated stem and climbing habit, in allusion to which the specific name was given. It was introduced from Brazil by M. Binot, in 1902, and flowered at Kew in July of the following year, when it proved identical with a dried specimen collected by M. Glaziou (n. 14303), and was named and described, the name afterwards appearing in the second edition of the *Kew Hand-List of Orchids* (p. 101). It has since flowered annually. Owing to the elongation of the stems the pseudobulbs are distant from each other from two to four inches, the intervening portion being clothed with imbricating lanceolate distichous bracts. The leaves are oblong, and from two to four inches long, while the racemes are arching, five to seven inches long, and bear numerous light green flowers, with narrow segments. The lateral sepals are united for about half their length, the front lobe of the lip strongly reflexed, and the keels and basal half white. It has recently been described and figured as G. Glaziovii (Cogn. in *Mart. Fl. Bras.* iii. pt. 6, p. 248, t. 53), whence we learn that it has also been collected on trees at Serra das Araras, near Therezopolis, by Moura, and in woods at Serra do Macahé, at nearly 4,000ft. elevation, by Ule. R. A. R.

CATTLEYA × LUCIENIANA.

A FLOWER of an interesting Cattleya has been sent from the collection of P. Smith, Esq., Haddon House, Ashton-on-Mersey, by Mr. Kitchin, who states that it was purchased from Messrs. John Cowan & Co. as C. Schilleriana. It is apparently a form of one which appeared with Messrs. Stanley Ashton & Co. in an importation of C. Harrisoniana, and was supposed to be a natural hybrid between that species and C. Schilleriana. This was doubtfully referred to C. × Lucieniana, Rchb. f., a plant whose origin was never cleared up, and which has subsequently been lost sight of. Its history has already been given (*O.R.* xi. pp. 282, 283). It should be added that the flower sent has distinctly undulate sepals and petals, rose-purple in colour, a rose-purple front lobe to the lip, and rosy lilac side lobes. It would be interesting to know if any further evidence exists that the two species grow together. Since the above was written another letter has been received from Mr. Kitchen stating that Mr. Cowan is confident that the plant came with an importation of C. Schilleriana. R. A. R.

CYMBIDIUM RHODOCHILUM.

THE annexed figure represents the very distinct and handsome Cymbidium rhodochilum, and is reproduced from a photograph kindly sent by Messrs. William Bull & Sons, who exhibited the plant in their group at the recent Temple Show, in which it formed a very prominent feature. It is a native

Fig. 25. CYMBIDIUM RHODOCHILUM.

of Madagascar, and was originally introduced to cultivation in 1900, by M. G. Warpur, who states that it always grows on masses of Platycerium, on the branches of high trees, near the rivers, and on the higher slopes of

the forest, at an elevation of 1,800 to 2,100 feet. It is said to prefer a moderate degree of humidity and much light (*Orch. Rev.* ix. p. 10). In May, 1902, one of the plants flowered finely at Kew, producing a scape over two feet long with about twenty flowers, and a second spike appeared about a year later. In May, 1904, it flowered in the collection of Dr. Hodgkinson, The Grange, Wilmslow, and was awarded a First-class Certificate by the Manchester Orchid Society, while a year later a similar award was given by the R.H.S. to a plant exhibited from the collection of J. Bradshaw, Esq., The Grange, Southgate. It has two near allies, which are both natives of Madagascar, and epiphytic in habit, namely, C. flabellatum, Lindl., and C. Humblotii, Rolfe, the latter, according to M. Warpur, growing on the stem of a palm, Raphia madagascariensis. It flowered in the collection of C. Ingram, Esq., of Godalming, in 1892. The other is unknown in cultivation. The general character of C. rhodochilum is well shown in the annexed figure, which represents the plant rather under half natural size. The sepals are light green, and the petals densely spotted with blackish on a light green ground. The lip is strongly three-lobed, and the side lobes green with black margins and a few large blotches of similar colour, while the broadly obcordate front lobe is crimson, over an inch and a half broad, with a yellow band on the disc spotted with olive green. It is certainly a very striking plant, and at present excessively rare. It is well figured at t. 7932 of the *Botanical Magazine*. Our picture should be viewed from the side, as owing to the size and shape of the photograph we had to insert the block sideways, but there was not room to add the name there.

R. A. R.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on June 12th last, and produced a magnificent display of Orchids, the awards consisting of seven medals, two First-class Certificates, seven Awards of Merit, and three Botanical Certificates.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), staged a fine group of choice things, which gained a Silver-gilt Flora Medal. It contained several fine varieties of Cattleya Mossiæ, including a good Reineckeana, Mrs. Egerton Grey, somewhat similar, but with a lavender tint to the flowers, and Wageneri with eight blooms, some good Masdevallia Harryana, a well-flowered example of Zygonisia × Rolfeana. Odontoglossum citrosmum with its variety album, O. × Wilckeanum, O. × Rolfeæ, Phalænopsis × Schrœderiana, Aërides crassifolium, Thunia Marshalliana, T. × Veitchiana, Brassavola Digbyana, Oncidium

macranthum, and others, with several brilliant Lælio-cattleyas, including Canhamiana, Martinetii, Dora magnifica, &c. Awards of Merit were given to Oncidium monachicum, remarkable for its petals being united at the apex with a ring, and Lælio-cattleya Kathleen Grey, a brightly-coloured hybrid between L.-c. Canhamiana and Lælia tenebrosa.

H. S. Goodson, Esq., Fairlawn, East Putney (gr. Mr. Day), received a Silver-gilt Flora Medal for a large and well-arranged group, containing Lælio-cattleya Wellsiana, L.-c. Canhamiana, L.-c. Fascinator, Brasso-cattleya Digbyano-Schrœderæ, Cattleya Mendelii H. A. Tracy, C. M. Herbert Goodson, both very handsome flowers, Miltonia vexillaria, some fine Odontoglossums, Cymbidium Lowianum, and other plants.

F. Menteith Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), gained a Silver-gilt Banksian Medal with a pretty group, containing a number of excellent varieties of Cypripedium × Maudiæ, C. niveum, and C. callosum Sanderæ, together with C. bellatulum album, C. × Lawrebel Shrubbery var., C. × Honore, Cattleya Mossiæ Wageneri Stella, C. M. W. xanthoglossa, and one or two others.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), showed Cymbidium × superbiens-Curtisii, C. insigne (Sanderi) The Dell var., and the magnificent Cattleya Mossiæ Reineckeana The Baron, the last-named, an exceptionally large form, being deservedly awarded a First-class Certificate.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), staged a splendid group of rare Orchids, including a fine example of the handsome orange-coloured Dendrobium Jerdonianum, covered with bloom, Masdevallia Lindeni purpurea, M. Harryana miniata, M. H. luteo-oculata, Epidendrum organense, E. paniculatum, E. atropurpureum Randii, Angræcum Scottianum, Polystachya zambesiaca, Brassocattleya striata, Cattleya × Eurydice, Læliocattleya Sunrise, and others. He also sent Thunia × Veitchiana Burford var., a very handsome form (Award of Merit), the curious Quekettia Jenmani, a neat little tuft with leaves about two inches long and inflorescences of small white flowers (Botanical Certificate), and Epidendrum confusum, a species allied to E. fragrans but having considerably larger flowers (Botanical Certificate).

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Bunney), showed Odontoglossum crispum xanthotes Walkeræ, a beautiful white form bearing several orange-coloured blotches. An Award of Merit was given.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent, Cypripedium Lawrenceanum hackbridgense. C. L. Westfield var., Lælio-cattleya Pacuvia gigantea, L.-c. Mrs. F. Gould (C. × Lawre-Mossiæ × L. tenebrosa), having a light rose flower veined with claret-purple, and a

brighter purple lip; and Cattleya Mendelii "Mrs. Frederick Knollys," a very beautiful white variety, delicately suffused with pale pink on the petals and front of the lip, with the disc pale yellow. An Award of Merit was given to the latter.

Miss Wilmott, Warley Place, Great Warley, Essex (gr. Mr. Gooch), received a Botanical Certificate for the remarkable Lueddemannia Pescatorei, bearing a pendulous raceme of nearly four feet long, crowded with flowers, the sepals being purple-brown and the petals and lip deep yellow.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), sent Cattleya Mossiæ aurea, C. M. Dormaniana, and two other fine forms, Lælio-cattleya Canhamiana Gatton Park var. and L.-c. Martinetii.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), sent a fine form of Lælio-cattleya Canhamiana.

H. Little, Esq., Baronshalt, Twickenham (gr. Mr. Howard), sent Cypripedium Curtisii exquisitum and C. × javanico-superbiens Little's var., two handsome things.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a very fine group to which a Silver-gilt Medal was awarded. It contained numerous brilliant Lælio-cattleyas, the forms of L.-c. Canhamiana and Fascinator being very rich and varied, while the orange-coloured L.-c. G. S. Ball was very effective; other good things being the richly-coloured L.-c. Canhamiana King Edward VII., two forms of L.-c. Clive, and L.-c. Aphrodite Brightness. There were also some good forms of Odontoglossum crispum, O. × Phœbe, O. × Harryano crispum, some good Phalænopsis amabilis Rimestadtiana, &c. An Award of Merit was given to Phalænopsis violacea Heaton var., an exceptionally fine form of the species.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a fine group, containing a nice batch of Phaius × Cooksonæ, the rare Cymbidium Huttoni (figured at page 153), and some fine Odontoglossums and Lælio-cattleyas, noteworthy among the former being the handsome O. × ardentissimum, and O. × Fascinator Our King, derived from O. crispum crossed with a good O. × Adrianæ. The flower was most like a blotched O. crispum, having very broad white segments, evenly blotched with chestnut brown, and some resemblance to O. × Adrianæ in the markings of the lip. An Award of Merit was given to L.-c. Canhamiana Meteor, a very handsome form, having the front of the lip very rich purple-crimson.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, received a Silver Flora Medal for a good group, containing some excellent forms of Cattleya Mendelii and C. Mossiæ, some good Lælia purpurata, Anguloa Clowesii,

Oncidium leucochilum and O. cornigerum, Odontoglossum hastilabium, Epidendrum radicans, various showy Lælio-cattleyas, &c. Cattleya Mendelii The Queen is a beautiful white variety with a few reddish lines on the disc. It came from the collection of the late Mrs. Briggs-Bury.

Messrs. Stanley & Co., Chase Side, Southgate, received a First-class Certificate for Cattleya Mossiæ Victoria-Regina, a very handsome form, having the flowers white, delicately tinged with lavender, and the front of the lip freckled with pale bluish purple.

AT the meeting held on June 26th there was again a very fine display, and the Awards consisted of one Gold and three other Medals, two First-class Certificates, four Awards of Merit, and four Botanical Certificates.

Major G. L. Holford, C.I.E., C.V.O. (gr. Mr. Alexander), staged a magnificent group, to which the Society's Gold Medal was awarded. At the back were some fine specimen Sobralias, the handsome Oncidium macranthum, Phalænopsis amabilis Rimestadtiana, Odontoglossum hastilabium and other tall things, with a number of brilliant Lælio-cattleyas, Lælia tenebrosa, Cattleyas, &c. Among the more noteworthy were some fine Cattleya Warscewiczii, one bearing a dozen fine flowers, and another five on the same inflorescence, Lælio-cattleya Martinetii, L.-c. callistoglossa Earl Grey, L.-c. Baroness Schröder, L.-c. Clive magnifica, and the beautiful white Miltonia vexillaria Queen Victoria. In the centre was a basket containing three plants of the rich crimson Sophrolælia læta Orpetiana. The group was equally remarkable for arrangement and good culture. First-class Certificates were given to Cattleya × Whitei splendidissima, and to Sobralia Holfordi, the latter bearing thirteen very large macrantha-like flowers with a white throat to the lip; while an Award of Merit was given to S. × Amesiæ (xantholeuca × Wilsoniana), bearing ten buff-yellow flowers tinged with rose.

H. L. Bischoffsheim, Esq., Warren House, Stanmore (gr. Mr. Ellis), staged a large and handsome group, to which a Silver-gilt Flora Medal was given. It contained a fine series of Cattleya Mossiæ, some good C. Mendelii, Lælia purpurata with sixteen flowers, L. purpurata with twelve, and a few good Odontoglossums, including O. Hallii, O. crispum Lehmanni, and O. odoratum.

J. B. Joel, Esq., Northaw House, Potter's Bar (gr. Mr. May), received a Silver Flora Medal for a beautiful group, containing some very fine specimens of Cattleya Warscewiczii, several good Lælia tenebrosa, one specimen of which had two five-flowered and two four-flowered spikes, and a noble example of Cypripedium Rothschildianum Northaw var., bearing a strong spike of five expanded flowers and one bud.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent a

small group of interesting things, receiving an Award of Merit for Thunia Marshalliana alba, bearing a raceme of white flowers with sulphur-yellow disc to the lip, and Botanical Certificates to each of the following :—Stelis muscifera, with racemes of deep purple flowers ; Cirrhopetalum Amesianum, cream white with rosy purple markings, Houlletia odoratissima var. xanthina, a yellow form of the species, and the rare Maxillaria molitor, Rchb. f., like a small edition of M. grandiflora.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), received an Award of Merit for Odontoglossum × Queen Alexandra var. Carmen (Harryanum × triumphans), an exceptionally fine dark form, the yellow ground colour being greatly reduced.

H. S. Goodson, Esq., West Hill, Putney (gr. Mr. Day), received an Award of Merit for Cattleya Mossiæ var. Mrs. A. Goodson, a very peculiar form, having the sepals and petals white, more or less mottled with rose, and the lip dark rose with a yellowish disc.

Norman C. Cookson, Esq., Oakwood, Wylam (gr. Mr. Chapman), sent the handsome Odontoglossum crispum Mundyanum, a very heavily blotched form, O. c. Sanderæ, with the colour suffused except at the tips and margin, O. c. Terpsichore, having broad segments suffused with rose and blotched with light purple, O. c. Medusa, a good white evenly blotched with claret purple on the sepals and petals, and O. × ardentissimum Sibyl.

J. H. Grogan, Esq., Slaney Park, Baltinglass, Co. Wicklow (gr. Mr. Cooper), sent a good dark form of Odontoglossum Harryanum.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cypripedium × Miss Sillem (Godefroyæ × niveum), a pretty white flower well spotted with purple.

Messrs. Hugh Low and Co., Enfield, received a Silver Banksian Medal for a good group, including some good forms of Cattleya Mossiæ and Mendelii, Cypripedium niveum, C. × Maudiæ magnificum, Barkeria spectabilis, some good Dendrobiums, including the white forms of D. crystallinum and D. Bensonæ, Promenæa xanthina, Bulbophyllum claptonense, and other good things.

Messrs. Stanley and Co., Southgate, sent Cattleya Mossiæ Reineckeana, C. M. Harrisii, a pretty blush white form, having the front lobe of the lip purple, margined with white, and C. × F. W. Wigan.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Royal Botanical Gardens, Old Trafford, in conjunction with the usual Whitsuntide show, and produced a good display of Orchids. All the groups shown were taken as Orchid Society exhibits, and the following awards were made :—

Gold Medals were awarded to E. Ashworth, Esq., W. Duckworth, Esq., A. Warburton, Esq., Messrs. Charlesworth and Co., and Messrs. James Cypher and Sons, for fine groups.

Silver-gilt Medals were awarded to R. Ashworth, Esq., P. Smith, Esq., and Mrs. S. Wood, for good groups.

A Silver Medal was awarded to Messrs. J. W. Moore, and a Vote of Thanks to Messrs. John Cowan and Co., for groups.

First-class Certificates were awarded to Cattleya Mossiæ Queen Victoria, from Messrs. Hugh Low and Co., and to Lælio-cattleya × Canhamiana Queen Victoria, from Messrs. James Cypher and Sons.

Awards of Merit were given to Cattleya Mendelii, Owen's var., from William Owen, Esq., and to Dendrobium × Arthur Ashworth (D. Dalhousieanum × Brymerianum), from E. Ashworth, Esq.

At the meeting held at the Coal Exchange, Manchester, on June 14th, the exhibits were not numerous, but included three groups which gained medals, other awards being few.

W. Thompson, Esq., Stone (gr. Mr. Stevens), exhibited a good group, consisting chiefly of Odontoglossums, to which a Silver Medal was awarded.

Mrs. S. Wood, Glossop (gr. Mr. Gould), also received a Silver Medal for a good group of miscellaneous Orchids.

P. Smith, Esq., Ashton-on-Mersey (gr. Mr. Kitchen), received a Bronze Medal for a small group.

R. le Doux, Esq., West Derby (gr. Mr. Davenport), received a Cultural Certificate for a handsome specimen of Cœlogyne Dayana.

A. Warburton, Esq., Haslingden (gr. Mr. Raven), received an Award of Merit for Cattleya Mossiæ var. Julius Roehrs, closely allied to the variety Wageneri.

E. Ashworth, Esq., Wilmslow (gr. Mr. Holbrook), sent Cattleya Mossiæ Wageneri Queen Alexandra.

S. Briggs-Bury, Esq., Accrington (gr. Mr. Wilkinson), sent Cypripedium Lawrenceanum Sir Trevor.

Messrs. A. J. Keeling and Sons, Bradford, were accorded a Vote of Thanks for a small group.

Messrs. Hugh Low and Co., Enfield, sent Cattleya Mendelii Colossus.

Mr. S. Allen, Sale, sent a fine plant of Lælia tenebrosa.

BIRMINGHAM BOTANICAL AND HORTICULTURAL.

Some good Orchids appeared at a special show of this Society, held at the Botanical Gardens, Edgbaston, on June 13th last.

The Right Hon. J. Chamberlain, M.P., Highbury (gr. Mr. Mackay), received a Silver-gilt Medal for a splendid group, including some good

Cattleya Mossiæ forms, Lælio-cattleya × Canhamiana, Anguloa Clowesii, a pretty batch of Disa × langleyensis, &c.

G. H. Kenrick, Esq., Whetstone, Edgbaston (gr. Mr. Macdonald), received a Bronze Medal for a group of well-flowered Miltonia vexillaria, Vanda teres, &c., prettily arranged with ornamental-leaved plants.

Messrs. Charlesworth and Co., Bradford, received a Silver-gilt Medal for a very fine group, including many handsome Lælio-cattleyas, Phalænopsis amabilis Rimestadtiana, Odontoglossum Harryano-crispum, O. × loochristiense, &c., also First-class Certificates for Lælio-cattleya × Canhamiana King Edward VII., Phalænopsis violacea Heaton var., and Cypripedium × Maudiæ.

Messrs. James Cypher & Sons, Cheltenham, received a Silver Medal for a bright group of Cattleyas, Cypripedes, Masdevallias, Odontoglossums, Oncidiums, &c.

Messrs. Sander & Sons, St. Albans, also received a Silver Medal for a fine group, containing many good Cattleyas and Lælio-cattleyas, Phaius × Cooksonæ, Cypripediums, and other showy Orchids, one noteworthy plant being Cypripedium × imperiale (Stonei × Rothschildianum).

YORKSHIRE GALA.

SOME competitive classes for Orchids were included in the programme of this meeting held at the Bootham Park, York, on June 20th to 22nd.

For the best table of Orchids, 12 feet by 5 feet, arranged for effect, the first prize went to Messrs. J. Cypher & Sons, Cheltenham, for a very fine display of the showy species of the season, the second prize going to Mr. John Robson, of Altrincham, and the third to Mr. Vause.

Messrs. Cypher also secured the first prize in the class for ten distinct varieties in bloom, and also for six, the groups including some noteworthy examples of Cattleya Mossiæ, C. Warneri, Lælio-cattleya × Aphrodite and L.-c. × Canhamiana. W. P. Burkinshaw, Esq., Hessle, Hull (gr. Mr. Barker), was second in both classes, his more noteworthy plants being a beautiful specimen of Cattleya Mossiæ Wageneri, Lælio-cattleya × Fascinator, L.-c. × Amelia, and a pretty seedling Thunia. Other competitive classes produced some good things.

In the non-competitive classes, Messrs. Charlesworth & Co., Heaton, Bradford, staged a magnificent group, in which fine Lælio-cattleyas were conspicuous. A Gold Medal was awarded.

THE prize for six exotic Orchids at the Richmond Horticultural Society's Show, held on June 27th, was won by Mr. W. H. Young, Orchid grower to Sir Frederick Wigan, Bart., who also staged a fine non-competitive group.

ODONTIODA × VUYLSTEKEÆ.

M. VUYLSTEKE, of Loochristi, writes to say that his hybrid Odontioda × Vuylstekeæ is now extraordinarily fine, having produced a spike with thirty-two flowers, in proof of which he sends us a photograph showing the entire plant. This we have pleasure in reproducing, as our readers will

FIG. 26. ODONTIODA × VUYLSTEKEÆ.

doubtless like to see the result of two years' further growth. The photo is greatly reduced, in order to include the whole plant, but we have added a single flower natural size, from which its present condition can readily be judged. This is the photo of a flower given to us by M. Vuylsteke two years ago, but not used then, because we preferred a group which included

the two parents Odontoglossum Pescatorei and Cochlioda Noetzliana, which we also had taken, this showing the flowers reduced to four-fifths natural size (*O.R.* xii. p. 209, fig. 34-36). It will be remembered that the five-flowered inflorescence was the sensation of the Temple Show in 1904, the plant itself not being exhibited. The inflorescence is now very finely developed, and appears remarkable for so small a plant. We may briefly add that the ground colour of the flower is light cream yellow, more or less strongly suffused with rose, the large blotches deep salmon-red, and the crest of the lip deep yellow. A coloured plate has been given at t. 7990 of the *Botanical Magazine*. We hope that it will not be long before other seedlings of it reach the flowering stage. Such a success stimulates hybridists to further efforts, and we expect to see some striking developments during the next few years, including a "Scaret, blotched crispum."

DENDROBIUM WILLIAMSIANUM.

IT is interesting to record that the handsome Dendrobium Williamsianum has again been introduced, and has flowered in the collection of H. T. Pitt, Esq., Rosslyn, Stamford Hill. Mr. Thurgood writes that the plant was purchased from Messrs. Sander & Sons as a supposed new Dendrobium. The old pseudobulbs are about three feet six inches long, and the inflorescence is produced at the apex. It proves quite identical with the original plant, which was described by Reichenbach in 1878 (*Gard. Chron.* 1878, i. p. 652), from dried flowers and a sketch sent by Mr. B. S. Williams, of Upper Holloway, which had been collected in New Guinea, by Mr. Goldie. It was not till eight years after that it flowered for the first time, being shown by Mr. Williams at a meeting of the R.H.S. on July 13th, 1886, when it received a First-class Certificate (*G.C.* 1886, i. p. 172, fig. 32). Shortly afterwards it was figured in the *Orchid Album*, (vi. t. 252), where we learn that one only out of seven plants sent home arrived alive, and that that had a narrow escape from being lost through an injury about three years before. The plant was sold to the Hon. F. L. Ames, N. Easton, Mass., U.S.A., who saw it in bloom, and we believe the species has not re-appeared in England until now. The scape sent is over six inches long, and bears five flowers, which have an expanse of $2\frac{1}{2}$ inches, the sepals and petals being very pale lilac and remarkably flat. The lip is funnel-shaped, over an inch long, and bright purple, with a prominent fleshy keel on the disc, which terminates in front in three nearly membranous lamellæ, a sixth of an inch high. The column is purple in front. The margins of the lip are appressed to the sides of the column, and there is a channel underneath corresponding to the keel on the other side. It is a very distinct and striking species.

R. A. R.

NOVELTIES.

EACH of the two latest issues of the *Kew Bulletin* contains a Decade of New Orchids, of which the following is a brief summary :—

BULBOPHYLLUM KERRII, Rolfe.—A Siamese species collected by Dr. Arthur Kerr on deciduous trees on mountains round Chiengmai, at 2,000 feet elevation. It is allied to B. hirtum, Lindl., and has racemes of very hairy yellow flowers, and deciduous foliage. It recently flowered at the Trinity College Botanic Garden, Dublin, and proves identical with a plant which flowered at Glasnevin in January, 1901.—*Kew Bulletin*, 1906, p. 84.

BULBOPHYLLUM CAPITULIFLORUM, Rolfe.—A species imported with and resembling B. intertextum, Lindl., in habit, but having the flowers aggregated in small heads, and the colour whitish green, suffused with purple-brown towards the apex, and a lurid purple lip. It flowered at Glasnevin in October, 1900.—*l.c.*, p. 84.

CALANTHE MADAGASCARIENSIS, Rolfe.—A Madagascar species, introduced by M. Warpur, which flowered at Kew in August, 1900, being subsequently figured in the *Botanical Magazine* (t. 7780). It is allied to the Mauritian C. sylvatica, Lindl., and has flowers varying from white to lilac in the sepals and petals, and the lip from yellow to purple.—*l.c.* p. 84.

CALANTHE WARPURI, Rolfe.—Allied to the preceding, but different in structure, and having lilac to white sepals and petals, and a dark purple lip with a deep yellow crest. It was introduced with the preceding, and flowered at Kew a few weeks later.—*l.c.* p. 85.

CATTLEYA JENMANI, Rolfe.—A British Guiana species, allied to C. Gaskelliana, Sander, but having much broader leaves and smaller flowers. It was discovered at the sources of the Mazaruni River by the late Mr. G. S. Jenman, Government Botanist, and flowered in the collection of Miss Sinnock, Downford, Hailsham, Sussex. The flowers are rosy mauve with the disc of the lip yellow veined with red-brown, and the front lobe of the lip crimson.—*l.c.* p. 85.

PSEUDOGLOSSASPIS ARGENTINA, Rolfe.—Remarkable as an Argentine representative of the African genus Pteroglossaspis, of which four species were previously known. It was discovered by M. Stuckert, in the Rio Primero Valley, near Cordoba, and is not in cultivation.—*l.c.* p. 86.

CATASETUM EBURNEUM, Rolfe.—A species of the Pseudocatasetum group having long racemes of ivory-white flowers, quite unlike those of any other species in the genus. It was imported from the Cattleya Mendelii district by Messrs. Charlesworth & Co., Heaton, Bradford, and flowered in their nursery in September, 1900.—*l.c.* p. 86.

AERANTHES RAMOSA, Rolfe.—A Madagascar species which flowered at Glasnevin in October, 1901, and proved identical with one introduced by

M. Warpur. It is remarkable for its long slender branched scape, and the flowers are dull olive green in colour.—*l.c.* p. 87.

HABENARIA TRIQUETRA, Rolfe.—Introduced from the Shan States by A. H. Hildebrand, Esq., and flowered at Kew in July, 1903. It is allied to H. pectinata, Don, and has light green sepals, and white petals and lip, the latter being pectinate. The leaves are glaucous.—*l.c.* p. 87.

CYNORCHIS VILLOSA, Rolfe.—A Madagascar species introduced by M. Warpur, which flowered at Kew in September, 1901, being subsequently figured in the *Botanical Magazine* (t. 7845). It is a striking plant, having erect racemes of very hairy flowers, which are lilac purple in colour, with the lip and lower part of the petals white.—*l.c.* p. 88.

MASDEVALLIA PERUVIANA, Rolfe.—A Peruvian species which flowered at the Royal Botanic Gardens, Glasnevin, in July, 1898, and on subsequent occasions. It is allied to M. auropurpurea, Rchb. f., and has a light brown perianth tube, with red-purple tails, fading to whitish near the base.—*l.c.* p. 112.

DENDROBIUM COMPACTUM, Rolfe.—A pretty little species, allied to the Himalayan D. alpestre, Royle. It is a native of Yunnan, and flowered in the collection of Madame Louis de Hemptinne, of Ghent, in December, 1903, proving identical with specimens collected by Dr. A. Henry. The flowers are white with a green lip.—*l.c.* p. 113.

DENDROBIUM ANNAMENSE, Rolfe.—A species of the Clavipes group, allied to D. crumenatum, Swartz, but readily distinguished by its buff yellow flowers. It was introduced from Annam by W. Micholitz, and flowered with Messrs. Sander and Sons in March last.—*l.c.* p. 113.

BULBOPHYLLUM CALABARICUM, Rolfe.—A native of Old Calabar, W. Africa, sent to Kew by Mr. J. H. Holland, and flowered in the collection in October, 1899. It is allied to B. recurvum, Lindl., and has racemes of light yellowish green flowers with a dull reddish purple lip.—*l.c.* p. 114.

POLYSTACHYA BICOLOR, Rolfe.—A native of the Seychelles, introduced by Thomasset, and flowered at Kew in September, 1903. It is allied to the Indian P. purpurea, Wight, and has purple pedicels and sepals, with cream white petals, lip and column.—*l.c.* p. 114.

SACCOLABIUM RUBESCENS, Rolfe.—A pretty rose-coloured species, allied to S. ampullaceum, Lindl., but with a taller and smaller flower. It was introduced from Annam by Messrs. Sander, and flowered at Kew in March last, and shortly afterwards at Glasnevin.—*l.c.* p. 114.

SARCANTHUS INFLATUS, Rolfe.—Another of Micholitz's Annamese introductions, which flowered at Glasnevin in April last. It has bilobed leaves, and small panicles of flowers, with small green sepals and petals striped with brown, and a larger inflated lip, hence the name.—*l.c.* p. 115.

LISTROSTACHYS FIMBRIATA, Rolfe.—An ally of L. fragrantissima, Rchb.

f., sent from Uganda by the late Mr. J. Mahon, and recently flowered at Kew. The flowers are borne in long drooping racemes, and are translucent white with a greenish tinge.—*l.c.* p. 115.

MYSTACIDIUM MAHONI, Rolfe.—Described from dried specimens sent to Kew with the preceding. It is allied to M. xanthopollinium, Rchb. f., and is said to grow in dense interwoven masses.

VANILLA ZANZIBARICA, Rolfe.—A native of Zanzibar, described from dried specimens sent to Kew by Mr. R. N. Lyne. It is the only East African species of the section Foliosæ, of which seven are known from West Africa.—*l.c.* p. 117.

THE HYBRIDIST.

ODONTOGLOSSUM × TERPSICHORE.—At the R.H.S. meeting held on April 3rd last a very interesting hybrid Odontoglossum was exhibited from the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks, under the name of O. × Terpsichore. A flower has been kindly forwarded by Mr. Crawshay, who remarks that the cross (Pescatorei, unspotted. × polyxanthum) was made in June, 1899, the seed sown in August, 1900, and the first bloom appeared in March, 1906. In general character the flower most resembles the seed parent, but the sepals and petals are narrower and more acuminate, and the colour bright primrose yellow, with a red brown blotch near the base of each sepal, and a narrow line at the base of the petals. The lip is broadly pandurate, with the front margin undulate and somewhat crenulate, and the colour primrose yellow, with a very broad red-brown blotch in front of the crest, and a number of red-brown dots on the margin of the side lobes. The spiny crest most resembles the pollen parent, and is light yellow, each tooth of the crest bearing a narrow red-brown line. The lip is slightly adnate to the column at the base, and the column wings are very large, slightly crenulate, and white, with a few light cinnamon spots. It is a very attractive thing. Three additional forms were afterwards sent, showing the same general character though differing in some of the details.

LÆLIO-CATTLEYA × HURSTII.—The supposed hybrid between Cattleya Skinneri and Lælia purpurata, which was described at page 287 of our eighth volume under this name, unfortunately proved erroneous, the plant being a synonym of Lælia × Diana, hence the name was suppressed. Last year a plant purchased with the same record flowered in the collection of E. F. Clark, Esq., of Teignmouth, and is again sent, and as it has every appearance of being correct it is suggested that the original name be revived for this, thus preserving the original idea. The plant bears two racemes of three flowers each, fairly intermediate in shape and purple in colour.

ODONTOGLOSSUM × THOMPSONIANUM.

IT is interesting to record that the handsome Odontoglossum Thompsonianum has again been raised. Flowers are sent from the collection of M. O. Fanyau, of Hellemmes, Lille, by M. Cleverley, who writes:—I think the Edwardii-crispum has flowered wonderfully quickly for so small a plant. It is just under three years old from the time of sowing the seed, which was sown in July, 1903, and has flowered with a spike of twelve flowers on its second seedling bulb. The first bulb is 1½ inches long by an inch broad, and most resembles O. crispum, but the second is 4½ inches long by two inches broad, and is most like O. Edwardii, the five leaves being three to sixteen inches long by 1½ inches broad. The spike is forty-six inches long and bears twelve flowers. The development is much quicker than that of the original plant, whose history, together with a figure, has already been given (*O.R.* xiii. pp. 173, 241, 242, fig. 60), but the flowers sent are remarkably similar, the colour being intense blackish purple, with lilac tips and some similar markings at the base of the petals, the apex of the lip white, and the crest yellow.

ORCHIDS IN SEASON.

THREE interesting Lælio-cattleyas are sent from the collection of J. H. Grogan, Esq., Slaney-park, Baltinglass (gr. Mr. Cooper). They are seedlings raised in the collection. The first is a good typical L.-c. Schilleriana, raised from Lælia purpurata × Cattleya intermedia, and is flowering for the first time. A second, raised from L. purpurata Russelliana × C. intermedia, has the lip prettily veined with purple on a white ground, in this respect bearing a considerable resemblance to the seed parent, though typical in shape. A third seedling has a suffusion of light rose in the sepals and petals. The parentage is not quite certain. It is thought to have come from another cross, but some seedlings yet unflowered may throw more light on this point. Mr. Grogan has bloomed other L.-c. × Schilleriana seedlings, and says all were much alike in flower and growth, but the present one differs considerably. A good seedling form of L.-c. × Aphrodite, raised in the collection, is also sent, and a fine Lælia tenebrosa, having buff sepals and petals and the usual purple lip.

DENDROBIUM LASIOGLOSSUM.—With respect to the note at page 152, we find that it was owing to an inadvertence that the name D. shillongense was used for this species, and the record of the Certificate should be amended to D. lasioglossum, for it is fully recognised that the plant shown is the one figured at t. 5825 of the *Botanical Magazine*.—R. A. R.

NOTES.

THE Great Summer Show of the Royal Horticultural Society will be held in the grounds of Holland House, Kensington, on Tuesday and Wednesday, July 10th and 11th. The Orchid Committee will meet at 11 a.m. on the first day, and the exhibition will open to Fellows at 12.30 p.m., and to the public at 2 o'clock. Silver Cups and Medals will be awarded according to merit, and the arrangements for the Temple Show will apply as far as possible.

Two other meetings will be held at the Royal Horticultural Hall, Vincent Square, on the 17th and 31st, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. The subjects of the special competition on these dates are:—July 17th, Lælia tenebrosa and its hybrids: **July 31st, Phalænopsis, species and hybrids.**

The International Conference on Plant Breeding will be held from Monday, July 30th, to Friday, August 3rd. The Conference will open with a conversazione in the Society's Great Hall at 9 p.m. on July 30th, and there will be an exhibition of Lantern Slides of Hybrids and other objects. Sessions will be held on Tuesday, July 31st, at 10.30 and 2.30; Wednesday, August 1st, at 10.30; and on Thursday, August 2nd, at 10.30 and 2.30. Papers connected with Orchids are announced as follows:—Natural Hybrid Cattleyas, by R. A. Rolfe, Esq.; Odontoglossum Hybrids, by De Barri Crawshay, Esq.; and The Germination of Orchids, by M. Noel Bernard; while they will doubtless be included in various papers on general subjects which are also announced, as the "Mendelian Laws," Anatomical Structure of Hybrids, &c. Other functions are, a dinner at the Horticultural Club, Luncheons at Burford and Gunnersbury, a Banquet in the Society's Great Hall, and visits to the Natural History Museum at South Kensington, and to the Royal Botanic Gardens, Kew. The Titles of some of the papers had not been received when the provisional programme was issued. Particulars may be obtained from the Secretary.

The next meeting of the Manchester and North of England Orchid Society will be held at the Coal Exchange, Manchester, on July 12th. The Committee meets at noon, and the exhibits are open to inspection from **1 to 3 p.m.**

M. F. Denis, Balaruc-les-Bains, sends a few good seeds of Lælia anceps crossed with Brassolælia Helen, remarking that the cross was made on January 17th last, and the seed was mature in 4½ months. Thus the period of maturing approaches that of Lælia anceps × Brassavola Digbyana, which ripened in 3½ months, and Brassolælia Helen is a hybrid between **Brassavola Digbyana and Lælia tenebrosa.**

ORCHID PORTRAITS.

ANGRÆCUM KOTSCHYI.—*Gard. Chron.*, 1906, i. pp. 378, 379, fig. 153.

BRASSOCATTLEYA MRS. FRANCIS WELLESLEY.—*Gard. Chron.*, 1906, i. p. 422, with suppl. tab.

CATTLEYA MENDELII VAR. MRS. FREDERICK KNOLLYS.—*Journ. Hort.*, 1906, i. p. 561, with fig.

CYMBIDIUM RHODOCHILUM.—*Garden*, 1906, i. p. 315, with fig.

CYPRIPEDIUM HIRSUTISSIMUM.—*Journ. Hort.*, 1906, i. p. 513, with fig.

CYPRIPEDIUM NIVEUM.—*Gard. World*, 1906, p. 445, with fig.

CYPRIPEDIUM TIBETICUM.—*Gard. Chron.*, 1906, i. pp. 346, 347, fig. 139.

ODONTOGLOSSUM × AMABILE J. BRADSHAW.—*Journ. Hort.* 1906, i. p. 491, with fig.

ODONTOGLOSSUM × ARDENTISSIMUM VENUS.—*Gard. Mag.*, 1906, pp. 366, 368, with fig.

ODONTOGLOSSUM CRISPUM VAR. G. W. LAW-SCHOFIELD.—*Gard. Chron.*, 1906, i. p. 339, fig. 134.

ODONTOGLOSSUM CRISPUM VAR. LEONARD PERFECT.—*Gard. Chron.*, 1906, i. pp. 348, 349, fig. 141, 142.

ODONTOGLOSSUM × OSSULTONI.—*Gard. Mag.*, 1906, pp. 418, 419, with fig.

ODONTOGLOSSUM × PERCULTUM ORION.—*Journ. Hort.*, 1906, i. p. 537 with fig.

PHAIUS MACULATUS VAR. FLAVUS.—*Gard. Mag.*, 1906, p. 402, with fig.

SACCOLABIUM BELLINUM.—*Gard. Chron.*, 1906, i. p. 419, fig. 168.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be* ***dealt with in the body of the work***].

J. F. S. Masdevallia floribunda, Lindl. and Camaridium ochroleucum, Lindl. The method of pressing flat between stout blotting paper proves highly successful. Please send the photograph. The other matters shall be attended to.

A. G. G. A specially fine form of Oncidium crispum, Lodd., with numerous yellow markings on the flower. This peculiarity is rare, and the cause not certainly known.

W. S. Masdevallia coriacea, Lindl.

H. G. A. Dendrobium mesochlorum, Lindl.

W. W., J. H. G. There is no longer any doubt about the identity of the two plants, but as Cymbidium insigne is much the older it must be adopted.

G. W. J. We have written for the information about Cypripedium Godefroyæ, but have not yet received a reply.

G. H. S. Apparently both forms of Oncidium praetextum, Rchb. f., which is very variable.

Polypodium Fibre.—An excellent sample of polypodium fibre is sent by Mr. F. Borowski, of Colne, a Rhein, Germany. This substance has long been used on the Continent for Orchid culture with great success, and to some extent in this country also. We should like to have the experience of those who have tried it.

Catalogue received.—Cata'ogue Général d'Horticulture et d'Exportation, from L. J. Draps Dom, Laeken, Bruxelles, containing a good selection of Orchids, with figures of four hybrid Cypripediums.

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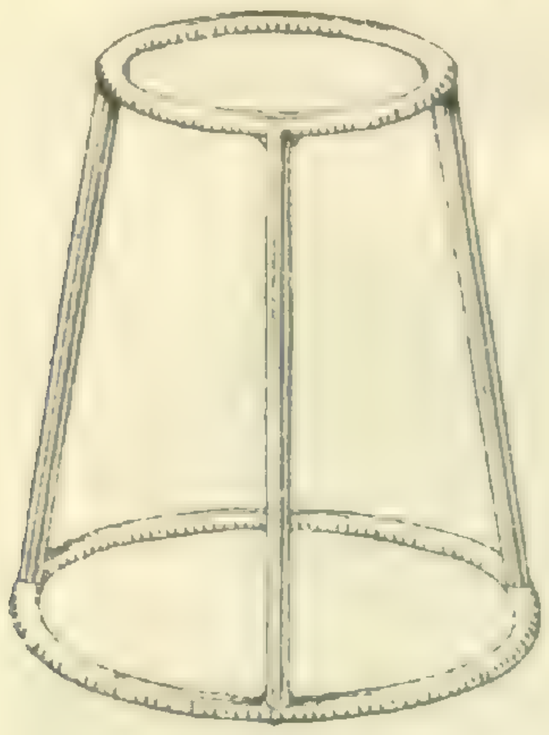

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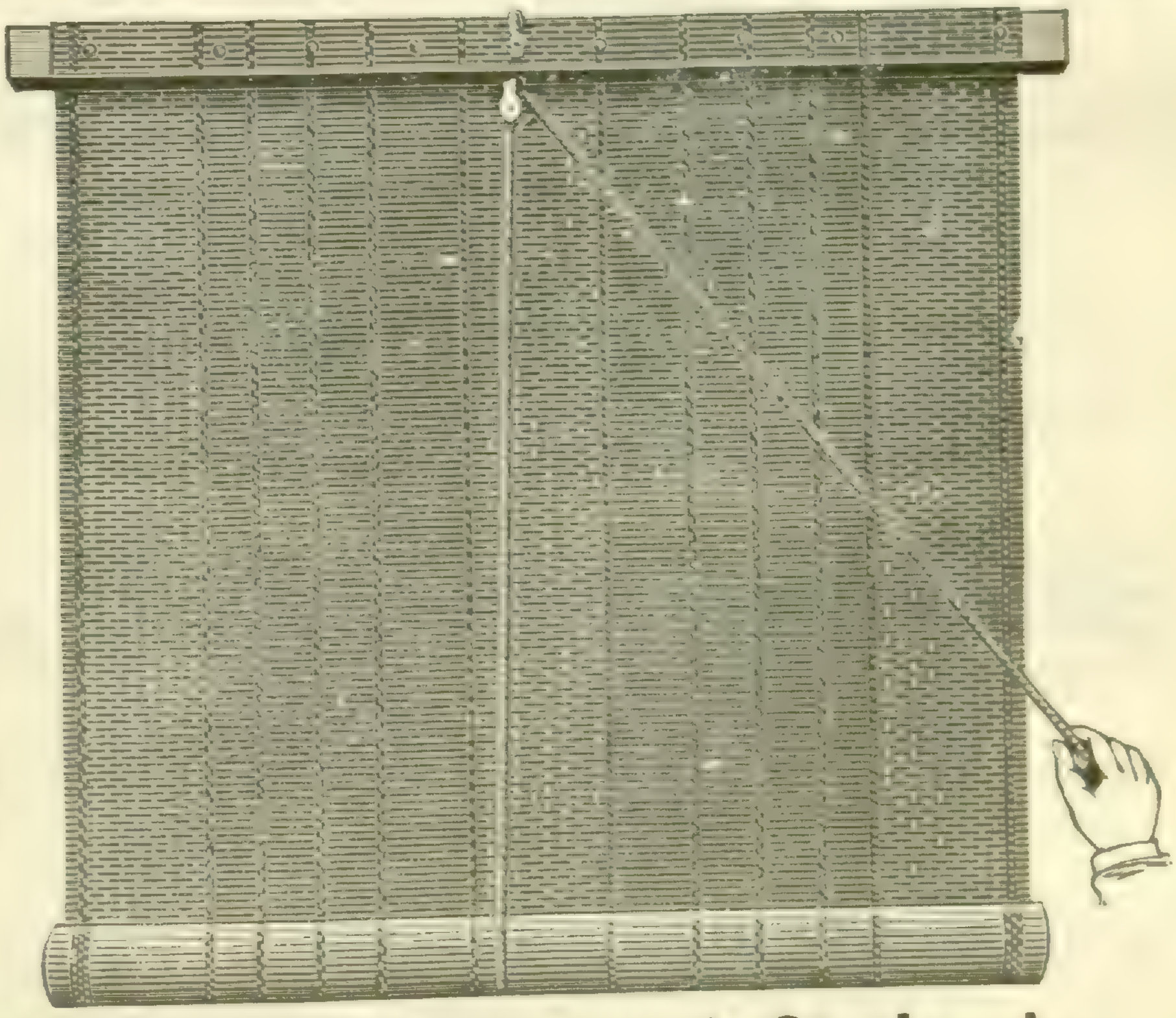

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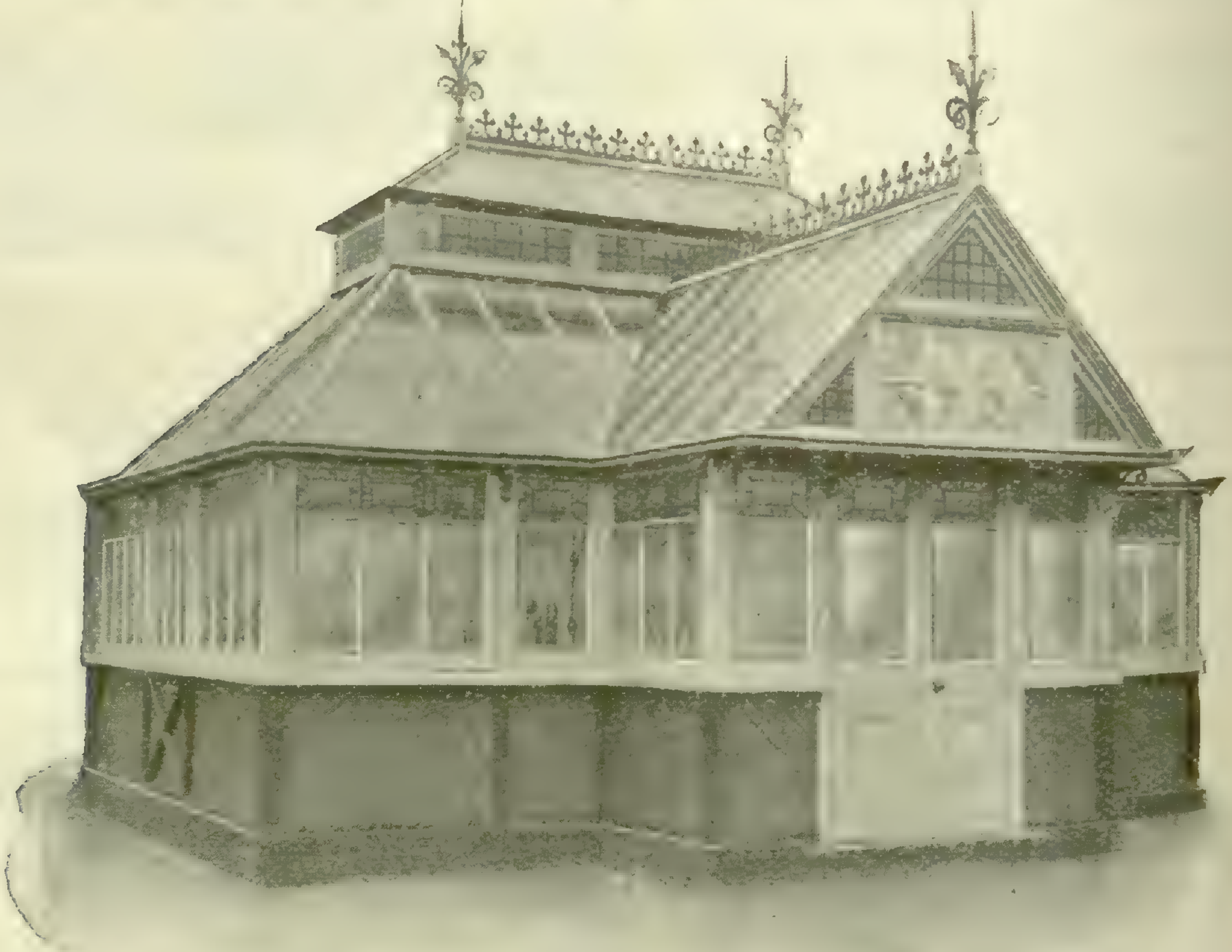

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An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XIV.] *AUGUST*, 1906. [No. 164.

THE HYBRIDISATION CONFERENCE.

THE International Conference on Hybridisation and Cross-Breeding, convened by the Royal Horticultural Society commenced, on Monday evening, July 30th, with a conversazione in the Society's Large Hall, Vincent Square, and an address of welcome to the delegates was given by Sir Trevor Lawrence, President of the Society. He welcomed the guests not only on behalf of the Society, but of the whole world of horticulture. He was sure that they would listen with the greatest interest to the papers that would be read to the Conference. The gardening industry was a very important one, and he might say was at the head of the minor industries of this country. The general public did not fully realise the great obligation they were under to plant breeders, for there was scarcely a garden, however humble, that did not contain some plants whose existence was due to their intelligence and industry. He reminded his audience of Huxley's words that the scientific spirit was more valuable than any of its results. With regard to plant breeding—and he did not claim to be a scientist—he had devoted a certain amount of attention to the cultivation of Orchids, and he could recommend it as a most instructive pursuit. Before long the supply of Orchids from abroad would cease [We hope not.—ED.], and we should be entirely dependent upon our own breeders. There was scarcely a collector who had not got his house full of seedlings. A number of interesting papers had been promised, and it was known that they were of great value, judging by the names attached to them. They would appear in full in the Society's *Journal*.

A number of exhibits were ranged round the hall, chiefly relating to the question of genetic variation and heredity, but practically nothing relating to Orchids, the only exception noticed being in a group of exhibits from Mr. C. C. Hurst, F.L.S., which included two photographs of Paphiopedilum × Hera, illustrated on pp. 71, 72 of our eleventh volume.

The proceedings proper opened on Tuesday morning, July 31st, with an inaugural address from Mr. W. Bateson, F.R.S., V.M.H., President of the Conference, "On the Progress of Genetic Research." He began by

alluding to the first Conference on Hybridisation and Plant Breeding, held at Chiswick in July, 1898, remarking that the predominant note eight years ago was mystery, but now we speak less of mystery than of order, and this he attributed to the revelation of Mendel's clue, and the manifold advances in knowledge to which it had led. "The most protean assemblage of hybrid derivatives," he remarked, "no longer menaces us as a hopeless enigma. We are sure that even the multitudinous shapes of the Cucurbits, or the polychromatic hues of Orchids—though they may range from one end of the spectrum to the other—would yield to our analysis." Proceeding, the author spoke of the need of a name to indicate the nature of the pursuit, and proposed the use of the word "Genetics," indicating the elucidation of the phenomena of heredity and variation, or, in other words, the physiology of Descent. Genetics was a subject of vast range, but the various phenomena were closely related, and the worker must be wary of narrowness. "While he is engrossed, and perhaps lost, in the idiosyncracies of Orchids a discovery may be made concerning Peas, or it may even be Mice or Lepidoptera, which is just what the Orchidist requires to clear away his own obstacles." Practical and scientific workers had equal need of each other's aid, and had equal prospects of benefitting from the partnership. After discussing in detail the progress of genetic enquiry, and the phenomena of purity of breed and reversion, he went on to speak of the practical importance of the question. As regards the production of new forms that are re-combinations of pre existing characters, he said that in the majority of cases no infallible rule can yet be given to produce the desired result, though Mendelian knowledge often indicates the course which is most likely to succeed. And he added—"I am not straining the truth when I say that the right course is one which an operator guided by common sense alone would have studiously avoided." As regards the nature of the units which bring about the phenomena observed, he thought that, wild and unscrutable as the question sounds, "genetic research may answer it yet." He hoped to see in England a station for the experimental study of Evolution, as the truth about heredity was not only important to breeders, but to every branch of physiological or sociological enquiry. The great advances in the application of science have generally become possible through discoveries made in the search for pure knowledge, and Mendel's incomparable achievement was brought about by the resolute determination to get to the bottom of one particular problem in hybridisation.

The first Orchid paper was reached on Tuesday afternoon, but we may add that in a paper entitled "Does Hybridisation increase fluctuating variability?" Prof. Johannsen, of Copenhagen, said that the results of statistical and other forms of research did not always agree, and he regarded statistical data as very misleading, because Mendel's researches

could not account for all the problems of heredity, and the question whether evolution was continuous or discontinuous could not be fully elucidated by Mendel's researches.

"Natural Hybrids of the Cattleya group" was the title of the paper by Mr. R. A. Rolfe, who said that his object was to collect together the natural hybrids of this group, which had become rather numerous. A good many species grew more or less intermixed, and, as the insects upon which they largely depended for the fertilisation of the flowers did not confine their visits to any particular species, the opportunity for hybridisation arose. These hybrids were not often derived from the most closely allied species, which seldom grew together, in fact of forty-four recorded natural hybrids eleven were between Cattleya and Lælia—forming a sort of hybrid genus—and one between Cattleya and Brassavola, while of the remainder eight were Lælias and twenty-four Cattleyas. Among the latter were a good many combinations between two distinct sections of the genus. About eighteen of them had also been raised artificially. The earliest reference to the existence of a natural hybrid in the group was in 1856. He had arranged them chronologically and geographically, with an alphabetical list of references to descriptions and figures, for the literature of the subject was widely scattered. From a botanical standpoint, it was important that these curious intermediate forms should be taken at their true value, for they destroyed the natural limits of species, sections, and genera, and in practice it was found that, unless their real origin had been recognised from the outset, they had been classed as anomalous forms or varieties, or as distinct species, according to the amount of difference they presented from existing forms. A good many had been recognised as hybrids from the outset. In a few cases natural hybrids were common and very variable, and the question had arisen whether secondary hybrids might not occur, but this phase of the question was at present largely speculative.

Prof. Pfitzer, of Heidelberg, read a paper on "Hybridisation as a proof of natural affinity among Orchids," pointing out differences between classification based on floral and on vegetative characters, and the significance of genera which hybridised together. The natural arrangement of Orchids was not quite settled, but he held that genera which could be hybridised together were certainly nearly related. Among generic hybrids he mentioned the inexplicable case of *Zygopetalum* crossed with Odontoglossum, in which the mother plant alone was reproduced. Mr. Rolfe remarked that the cause of this was not yet clear, and the experiment had been repeated more than once. It looked like a case of dominance absolute and complete, and if so the reverse cross should throw light on the question. He had tried to obtain the reverse cross, but without

success. In the case of Epiphronitis × Veitchii the dominance was on the side of the pollen parent, Epidendrum radicans. The generic character of the mother, Sophronitis grandiflora, was completely lost, yet the influence was obvious, in the greatly dwarfed habit and in the size and colour of the flower. There was no mistake in the record, for the reverse cross could not be raised. And it was not the only case of the kind, for capsules could not be obtained on Epidendrum radicans with pollen of other genera, though the reverse crosses could be made. Mr. F. W. Moore, Glasnevin, mentioned other crosses where the seed bearer was reproduced, pure and simple. It had been suggested as a case of parthenogenesis. Mr. Lynch, Cambridge, said he had tried to cross Vanilla and Sobralia, without success.

Mr. de Barri Crawshay, Rosefield, Sevenoaks, read a paper on "Hybrid Odontoglossums," which was illustrated by a beautiful series of coloured paintings of hybrids raised by himself and others, showing in many cases considerable variation from the same cross. There were now forty-nine certificated hybrid Odontoglossums, and he found O. crispum and O. Harryanum the best parents. The work was making rapid progress, and large numbers of hybrids would flower within the next few years. Mr. Rolfe alluded to the large number of natural hybrids in this genus, and their remarkable polymorphism, on which the present experiments should throw some light. Already three secondary hybrids had been raised closely resembling wild forms, which had probably a similar origin. It had long been a problem how far secondary hybrids occurred in nature, and for a long time he had looked out for a hybrid Odontoglossum showing clear evidence of descent from three species, as such might occur in certain localities, and their appearance would be conclusive. In the case of re-crossing with one of the original parents no new character was introduced, and one could not say whether a near approach to one of the parents was due to secondary crossing or not. He hoped hybridists would pay a little more attention to this phase of a very interesting problem.

Other papers followed, none of them dealing with Orchids, and in the evening the members of the Conference were the guests of the Horticultural Club at the Hotel Windsor, when a most interesting evening was spent. The proceedings during the following three days will be dealt with next month.

An ordinary meeting of the Society was held in the large Hall on July 31st, when, appropriately enough, numerous hybrid Orchids were on view, in a few cases together with their parents. A report appears on page 247. Most of the Conference exhibits of the previous evening were also on view.

CALENDAR OF OPERATIONS FOR AUGUST.

By J. M. Black, Streatham.

Dendrobiums.—By the middle of the month a good many Dendrobiums will be showing their last leaf, an indication that their growing season is drawing to a close. Last year, when we had at Chessington a house entirely devoted to these plants, no more shading was used after the middle of August, and no scalding took place, nor yet did the plants lose their leaves. Those plants which were still in strong growth made perhaps some little haste to finish up, and the pseudobulbs were probably a little shorter than they would have been had shading and close growing conditions been continued longer, but the same number of nodes were produced, the internodes being shorter. There is little doubt that it is better to make full use of the late August and September sun to thoroughly ripen the new pseudobulbs, rather than resort to cold vinery treatment and starvation during the winter. The summing need not be suddenly applied, but gradually, and the plants being now in full leaf and thoroughly rooted, and receiving full sun and more air, a greater quantity of water at the root will have to be given than at any time during the summer. The top ventilators must still be closed as soon as safe during the afternoon, so that growing conditions are not really discontinued. A great increase in leaf transpiration will follow this bright and airy treatment, which will stimulate root action, and the pots will rapidly become matted with fine healthy roots. Any loss in the length of the pseudobulbs will be fully compensated for in their increased girth, and the yellow hard pseudobulbs may be relied upon to yield a harvest of blooms on pedicles stout enough to support them. A soft grown Dendrobium may have its flowers hanging limply, head downwards, round the bulb, especially if it has outgrown its strength, and become rickety through superabundance of nitrogenous food. The weak point in this wholesale treatment of a house of plants would seem to be that plants that are only half grown are having the same treatment as those on the point of finishing, but this is really not a question of so much importance as it would at first sight appear, as no plant is being starved either for water at the root or for heat. The closing of the top ventilators early in the afternoon is really very necessary for some time yet.

This autumn treatment will suit excellently well such Dendrobes of different character as are represented by D. nobile, the nobile and aureum hybrids, D. Phalænopsis, D. formosum (which will be making up its buds), D. Brymerianum, D. Dalhousieanum, D. thyrsiflorum, and other hot growing kinds. D. aureum finishes early, is wholly deciduous, and may be taken into a cool house, and it will require but little water once the bulbs are thoroughly ripe. D. Wardianum should also be kept somewhat cooler

than the others aforementioned, particularly the large imported pieces. To keep up the stock of any special variety, it is absolutely necessary to propogate it from the eyes, or from the aerial growths, and we have quite successfully worked up a batch of a white variety in this way, from a very small plant, and without the plants ever being in a lower winter temperature than 55°.

MEXICAN LÆLIAS.—Before the end of the month shading will also be no longer required on these plants. These Lælias require at all seasons an airy atmosphere, and particularly now when the season's growth is nearing completion, and with the discontinuance of shading. Plants of Lælia anceps are rooting strongly, and sending up their flower spikes, and under the peculiar treatment that they enjoy will require to be liberally watered.

MILTONIA VEXILLARIA.—These plants are now becoming active again, and the present month is a good time to repot them. A compost of half sphagnum moss, half good Orchid peat, with a good sprinkling of silver sand and oak leaves will be found reliable. Miltonias belong to those Orchids which do not show any signs of exhaustion after years of cultivation, being in this respect like the Odontoglossums, to which they are closely allied. Intermediate house treatment during the winter, and Cool house treatment during the summer, meets the requirements of M. vexillaria. There seems to be some difficulty in getting the Miltonias to cross with the Odontoglossums, but it is just possible that this cross may yet be made, when an interesting departure with great possibilities can be predicted.

SOBRALIAS.—These plants may be repotted as they pass out of flower and start to grow, which most of them are now doing. Sobralias are strong rooters and gross feeders, so that they must receive ample root room, and, for Orchids, a rich rooting medium. A compost of good turfy loam, peat and leaf mould, mixed with broken crocks, small pieces of charcoal and sand will be suitable. The pots should be thoroughly well drained, as large quantities of water will be required. Sobralias are quick growers, and are easily propagated by dividing the plant when repotting, an operation of some difficulty, owing to the mass of intertwined roots. Some growers feed this plant with liquid manure when well rooted and in full growth, and this can be recommended as being especially beneficial when the plant has not been disturbed for some time, and the compost is getting worn.

STAKING.—One must be constantly on the look out for growths that are inclined to become top heavy. Cattleya, Dendrobium, and other growths which may be too heavy and succulent to stand alone, should have a temporary tie up to sticks, to be more neatly tied later, when the growth has finished and ripened. It is somewhat annoying to discover a fine promising growth bent in the middle and the tip of the leaf hanging down.

INSECT PESTS.—By far my worst enemy is thrip. This, I think, must

come in from outside. A trained eye soon detects their marks, however, and there is soon an end of them. Scale, although passive enough to all appearance, is a somewhat insidious and sly individual, and it is somewhat difficult to explain how he finds himself right up near the growing point of, say, a young Cattleya leaf, as frequently happens. A plant to all appearances perfectly clean when looked at from the path, may have a cluster of fresh young scales scattered over the underside of the leaf, and possibly right up to the margin. Did the leaf start off with them from the base of the plant? This young scale can be readily sponged off, when it will be advisable to examine the plant carefully down at the base. If this young scale is left alone it will very soon suck the chlorophyll out of the leaf, leaving ugly, jaundiced marks behind.

GENERAL HINTS.—The month of August marks the dividing line between the growing and resting seasons for most Orchids. Gradually less shading will be required on all the houses, as the sun declines in power, and the shadows caused by the bars are already longer than they were a month ago. The nature of the foliage changes with the cooler nights and the approach of autumn, and the same amount of sun which might have been injurious during the early summer will now do good. Those Orchids which are deciduous will require little water after the foliage has fallen. Pleiones will be losing their foliage towards the end of the month, when watering will be discontinued as they come into flower. Catasetums, Cyrtopodiums, Mormodes, &c., will also require a dry rest. Watering must be gradually reduced as the foliage becomes yellow. On the other hand, Cattleyas, and all plants which retain their foliage, must have a good quantity during the autumn, even although finished up. There are many plants in the Cattleya house now finished growing for the season, and others have little more than started. To keep a Cattleya which has finished growth very dry thus early in the autumn, with the intention of hindering it from restarting, will be going the right way to defeat the object in view. It should be watered when it is dry. Lælia purpurata has now started, and many of its hybrids, including L.-c. Aphrodite, L.-c. Wellsiana, &c., are on the way. Most of the hybrids which have L. purpurata for a parent, grow slowly half way through the winter, so no discouragement need be felt if they appear a long way behind. In a house containing a large number of plants, there are always a few that are in bad health. There may be a great many reasons for this, and a different reason might be assigned to each individual case. Whenever a plant is observed in bad health the compost should be examined, and in many cases the plant will require to be put into a smaller pot. Sometimes a quite healthy plant goes back after repotting, as the result of an overdose of water. As the plant was repotted in anticipation of its remaining healthy, the check may mean that

the pot is now too large, and if the roots have gone black it will feel itself in a too insanitary condition to go on. Plants to which this has happened should be taken out, all the dead roots cut off, and repotted in, if need be, a smaller pot. This should be done at any and every season, for if a plant loses all its roots in the compost, it rarely, if ever, does any more good in that pot. The really busy season can now be considered over, but this does not mean that the Orchid grower has now nothing to do. There is a multitude of odd jobs always cropping up, and the routine work is at all times with us, and will be during this and next month most exacting.

CIRRHOPETALUM THOUARSII.

THIS very striking species, the one upon which the genus was originally founded by Lindley, proves to have a remarkably wide diffusion, and as a plant sent from the Seychelles, which has just flowered at Kew, proves identical with the original, a note on its history may prove interesting, especially as a similar if not identical plant has now been found in continental Africa. The genus was founded by Lindley in 1824 (*Bot. Reg.* x. sub. t. 832), the single species, C. Thouarsii, being founded on Bulbophyllum longiflorum, Thouars (*Orch. Iles Afr.* t. 98), a native of Mauritius and Madagascar. Lindley afterwards added Epidendrum umbellatum. Forst., from the Society Islands, and *Zygoglossum umbellatum*. Reinw., from Java (*Gen. and Sp. Orch.* p. 58), but the latter species is different. In 1838 he figured a plant introduced from Manila, by Cuming, under the same name (*Bot. Reg.* xxiv. t. 11), and the *Botanical Magazine* (t. 4237) followed, but neither represent the original plant, which does not appear to have been introduced to cultivation until living plants were sent from Mauritius by C. W. Bewsher, Esq., of the Oriental Bank there, which flowered at Kew in 1891, and the following year, first the clear yellow variety concolor (Rolfe in *Gard. Chron.* 1891, ii. p. 69), and afterwards the typical form. The variety concolor is strikingly distinct in colour, and was figured at t. 7214 of the *Botanical Magazine*. The Seychelles plant is quite typical, and was sent to Kew by H. P. Thomasset, Esq., of the Cascade Estate, with various other Orchids. It was found on moss-covered trees, in mountain forests. A plant having the same general character, except that the lateral sepals are rather narrower and less connate, has recently been collected in the Shiri Highlands, Zambesiland, by Mr. G. Adamson, and what may be the same thing has just flowered in the collection of Sir Charles Strickland, Bart., and is said to have come from Uganda (*Gard. Chron.* 1906, i. p. 57). This I have not seen. Other localities are Fiji and New Caledonia—a remarkably wide diffusion if all are specifically identical, as they appear to be from dried specimens. The discovery of the genus in Africa is interesting.

R. A. R.

PHALÆNOPSIS AMABILIS AT HEATON, BRADFORD.

The accompanying illustration represents a house of the beautiful Phalænopsis amabilis var. Rimestadiana in the establishment of Messrs. Charlesworth & Co., Heaton, Bradford, and is taken from a photograph kindly sent by them. The variety Rimestadiana is well known in gardens.

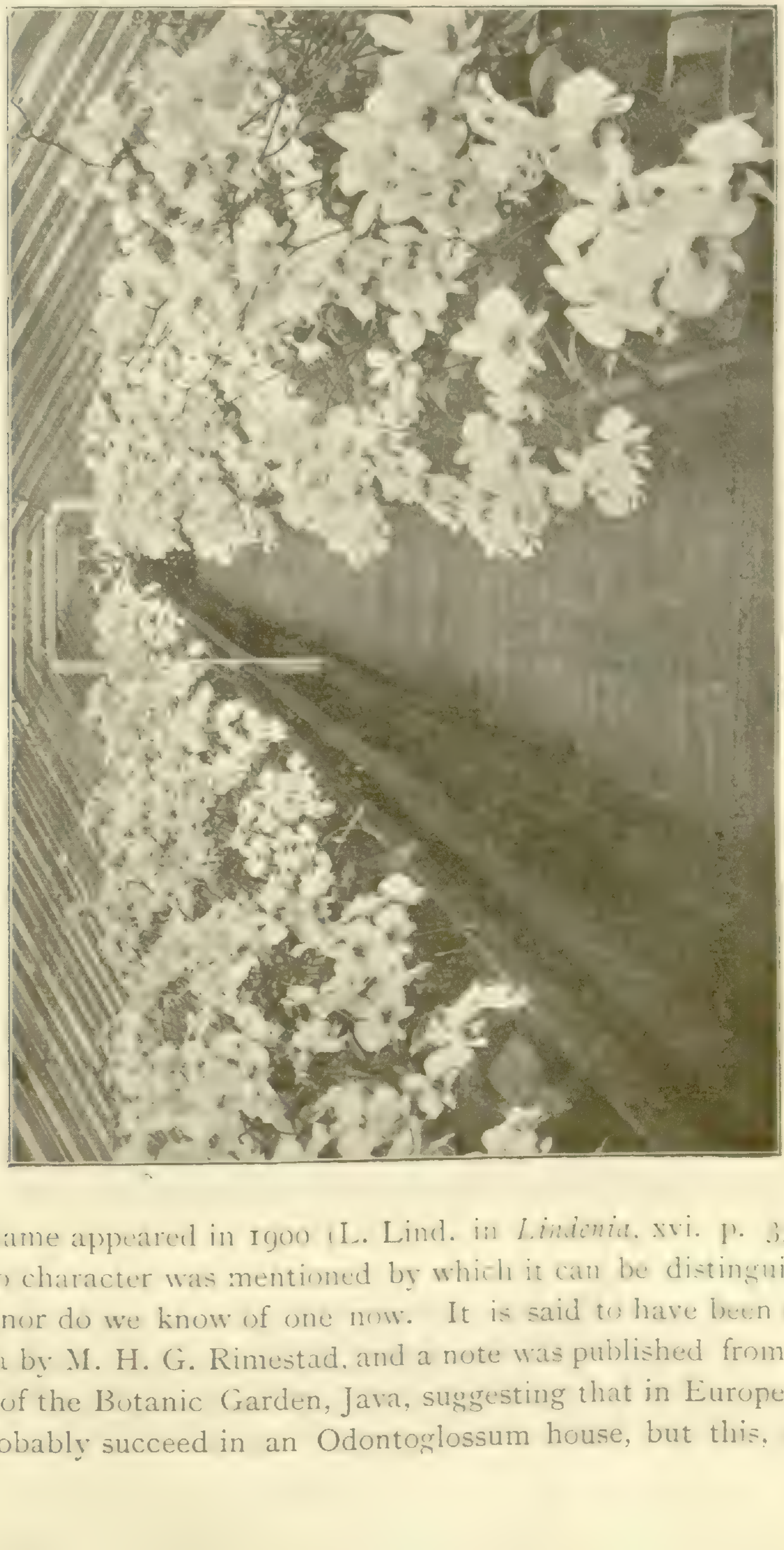

Fig. 27.—PHALÆNOPSIS AMABILIS.

and the name appeared in 1900 (L. Lind. in *Lindenia*, xvi. p. 35. t. 736), though no character was mentioned by which it can be distinguished from the type, nor do we know of one now. It is said to have been introduced from Java by M. H. G. Rimestad, and a note was published from M. W. T. Lefebre, of the Botanic Garden, Java, suggesting that in Europe the plant would probably succeed in an Odontoglossum house, but this, as was to

be expected, has not proved correct. He indicates the altitude of the habitat as about 600 métres. It has been subsequently figured, with a photograph showing the plant in M. Rimestad's Orchid Garden in Java (*Gard. Chron.*, 1902, ii. pp. 303, 306, fig. 100, with suppl. plate; *Rev. Hort. Belge*, 1903, p. 88, fig. 22, 23, 24). The *Gardeners' Chronicle* spells the name "Rimestadtiana," which has since been widely followed, but we find that M. Rimestad writes his name without a final "t," and consequently we have restored the original spelling. It is certainly a very beautiful and floriferous plant, and it may be interesting to append the history of the species.

This beautiful Orchid has been known to science for over a century and a half, having been figured and described by the Dutch botanist Rumphius as long ago as 1750, under the name of Angræcum album majus (*Herb. Amboinense*, vi. p. 99, t. 43). He found the plant in the island of Amboyna, growing on short trees covered with moss, up which, he says, it turns like a rope and hangs down in entangled tufts.

Two years later it was discovered near the watering place on the western extremity of Java, by Osbeck, who touched there on his voyage home from China. Specimens collected by him were forwarded to Linnæus, who described the plant in 1753, in the first edition of his famous *Species Plantarum* (page 593), under the name of Epidendrum amabile. Osbeck remarks that the plant grew on the branches of trees on the shore, and adds: "The plant hath great white odoriferous flowers, such as I never observed before. I had this plant lying in my room for several days together, but the flowers did not wither, and filled it with the most agreeable smell." The dried specimens, it is interesting to note, still exist in the Linnean Herbarium, in an excellent state of preservation.

Roxburgh afterwards transferred the plant to Cymbidium, under the name of C. amabile (*Fl. Ind.* iii. p. 457). He tells us that it is a native of the Moluccas, whence it was introduced to the East Indian Company's Botanic Garden, at Calcutta, in 1798. Roxburgh died in 1822, and his work was not published till afterwards.

In 1825 Blume transferred it to a new genus, under the name Phalænopsis amabilis (*Bijdr.* p. 294, t. 44), the generic name commemorating a resemblance to certain species of moths. Blume found the plant in woods near the coast of the small island of Nusa Kambangan.

Lindley, in 1833, included the plant in his *Genera and Species of Orchidaceous Plants* (p. 213), but in 1840 he unfortunately confused it with an allied Philippine species, which he figured under the same name (*Bot. Reg.* 1838, t. 34). He mentioned the names of Blume, Linnæus, and Rumphius, and then added:—"This very rare and beautiful epiphyte flowered a few weeks since in the Epiphyte house of Messrs. Rollissons, of

Tooting, I believe for the first time in Europe. It had been sent to them from Manilla by Mr. Cuming, in 1837."

Ten years later the Malayan species appeared in cultivation, nearly a century after its original discovery, and Lindley, instead of detecting his mistake, actually described it as a new species, under the name of Phalænopsis grandiflora (*Gard. Chron.* 1848, p. 39). He remarked :—" A small plant of this noble Epiphyte was exhibited on the 7th of September in the last year, by J. H. Schröder, Esq., of Stratford Green, when it received the Silver Banksian Medal. It was not supposed at that time to be a distinct species from the well-known Phalænopsis amabilis, but was regarded merely as a fine variety. Upon a comparison of it with the Manilla species it proves to possess so many points of difference that no doubt can be entertained of its being really distinct. . . . We understand that the large flowered Phalænopsis is a Java species, imported by Messrs. Veitch."

In 1862 Lindley's error was pointed out by Reichenbach (*Hamb. Gartenz.* 1862, p. 35), when the new name P. Aphrodite was proposed for the Philippine species, but by this time the plants had become so well known under the erroneous names, and had been so frequently figured, that it proved extremely difficult to rectify them, though the correct names have now been at least partially adopted. The latest development has already been mentioned.

It is rather widely diffused, having been found in North Borneo, Celebes, and south-east New Guinea, as well as in Java and the Moluccas, as previously mentioned. R. A. R.

BRITISH HYBRID OPHRYSES.

THE discovery of the Ophrys × hybrida in Kent, about the end of May, 1905, awakened a large amount of local interest, and the result has been followed by the detection of five more examples during the present year, two of them by the original discoverers, Messrs. Walker and Harris. Flowers of each of these are sent, and one has a more entire lip than the specimen sent last year. Two others are said to have been found by a student at Wye College, and a photograph of a fifth has been sent by Mr. W. H. Hammond, of Canterbury, who remarks that the spike was brought to him by a working man.

Mr. Hammond also sends a spike of another very interesting hybrid, remarking that it looks like a cross between O. apifera and O. arachnites, which grow close together in the locality where he found it. All three are included in a photograph also sent.

It is a particularly interesting development, for this hybrid was recorded

as long ago as 1829, by Gerard Edwards Smith (*Cat. Rare Pl. S. Kent*, p. 57). He there remarks:—"O. arachnites and O. apifera, by a commixture of pollen, produce a great variety of character. The type most constantly preserved is the proportion and terminal segment of arachnites. I have not yet seen a variety exhibiting the lip of the Bee with the petals, calyx and staminal of arachnites. . . . If among the Alps such varieties abound as they do upon our chalk downs, Haller's union of the species can scarcely be regarded with surprise." The same hybrid has been recorded from two Continental localities. It was described by Chodat, in 1889, under the name of Ophrys × Botteroni (*Bull. Soc. Bot. Genev.* v. p. 187) from a specimen found in 1882, near Biel, in the canton of Berne, and is regarded as probably a hybrid between these two species. A figure by M. Schulze (*Orch. Deutschl.* t. 31 d.) quite confirms the idea. In 1891 it was again described under the name of O. × Albertiana (G. Camus in *Bull. Soc Bot. Fr.* xxxviii. pp. 40, 43), from specimens found at Champagne, Seine et Oise, France, between the years 1880 and 1889. Hanbury and Marshall record the Kentish locality of this hybrid as Downs above Folkestone, where the parents grow together in good quantity (*Fl. Kent*, p. 333).

Two other Kentish hybrid Ophryses have been recorded, the first by G. E. Smith (*Cat. Pl. S. Kent*, p. 58), who, commenting on a plant found on the Downs between Newington and Lyminghe, and sent to him by Mr. Lee, enquired:—"Is it possible that a plant of O. arachnites can communicate with, and receive pollen transferred by an insect from O. fucifera? I had specimens of O. arachnites and fucifera blooming together. If this be the case—but let it be regarded as supposition—the varieties in O. fucifera may be explained." O. fucifera is now regarded as a form of O. aranifera, and it is noteworthy that a hybrid with this parentage was described, in 1887, under the name of O. × Aschersoni (Nanteuil in *Bull. Soc. Bot. Fr.*, xxxiv., p. 423). It was found near the villages of Vaux and Champagne, in June, 1887.

The remaining Kentish hybrid is O. apifera × aranifera? (*Hanb. and Marsh. Fl. Kent*, p. 334), of which it is remarked:—"Two specimens sent to us fresh by Mr. G. L. Bruce, of the Toynbee Hall Nat. Hist. Society, appear to be this hybrid; they were gathered in Magpie Bottom, near Shoreham, 1898." This hybrid has two Continental names. It was described in 1883 under the name of O. × epeirophora (Peter in *Flora*, 1883, p. 10) as a hybrid between the species in question, collected near Lake Starnberger, in South Bavaria. It is probably also the O. × Muteliæ (G. Camus in *Journ. de Bot.*, 1893, p. 150), based on the O. apifera var. Muteliæ (Mutel in *Ann. Sc. Nat.* ser. 2, iii. p. 243, t. 88, fig. B)—at all events the opinion is expressed that it is probably a hybrid between O. aranifera and O. apifera.

R. A. R.

THE HEAVENLIEST FLOWER.

Several of the recent numbers of the *Gardeners' Chronicle of America* which have reached us have not contained any information about Orchids. The May issue can scarcely be called an exception, but it contains the following article on "The Heavenliest Flower," which our readers may like to see :—

"It was always rather hard to believe that a certain Dutchman, in the time of the tulip craze in Holland, paid 4,203 guilders for a single commonplace tulip bulb that looked like an onion, and it comes much easier to understand how an Englishman should have been willing to pay 6,000 dollars—more than twice as much as the price of the famous tulip—for an Orchid, in London recently. The Orchid is a heavenly flower, and the tulip not only earthly, but Dutchy. The Orchid often grows in the air, and appears to possess almost miraculous characteristics. One of the species not only catches insects, but keeps its long tentacles continually in motion to get hold of them. The Orchids which live in the air spread their roots abroad to absorb the moisture of the atmosphere, and they solve the problem which the scientists are still vainly striving to solve, namely, of capturing nitrogen direct from the atmosphere.

And their beauty! That, beyond all question, and not their wonderful capacity for living in the air and moving stealthily about, like a live thing, to catch insects, is the divinest thing about them. A show of fine Orchids is like a flight of beautiful birds: the enthusiast might even compare it with a throng of angels. And if beautiful Orchids convey such a suggestion in a floral hall or a conservatory, fancy what the effect must be as their brilliant and delicate flowers hang in masses in luxuriant tropical forests, where the palm vies with the feathery bamboo or the far-spreading banyan in splendour! In such a situation, amidst the splashings of some tropic stream, their colours, in rose, in lilac, in yellow, white, or green, prove as intense a delight as their violet-like odours. They are indeed a marvel, and if it is true that all things in nature are a symbol of the things of the spirit, the Orchids must symbolize the angels that were once pure and beautiful women.

This 6,000 dollar Orchid came from Burma, and was unique, of course, or it would not have brought so great a price. But the American child gathers in the woods Orchids which, in their more modest beauty, are in form quite as surprising as the tropical specimens, and gets them for nothing. Ladyslippers or moccasin flowers, the pogonia and the calopogon, the yellow-fringed and the purple-fringed Orchids grow hereabouts, and richly reward the searcher for their delicate splendours.—*Saturday Evening Mail.*"

MR. DAY'S ORCHID DRAWINGS.

A VERY interesting note on the above appears in the last issue of the *Kew Bulletin* (1906, p. 177), which we have pleasure in reproducing, as we believe that Orchidists will be glad to know more about this fine collection.

"COLLECTION OF DRAWINGS OF ORCHIDS BY THE LATE JOHN DAY. —In September, 1902, Mrs. Wolstenholme, of High Cross, Tottenham, sister of Mr. John Day, well known during his period as an amateur grower of Orchids, presented to Kew the very valuable collection of drawings of cultivated Orchids made by that gentleman. Mrs. Wolstenholme had previously bequeathed the collection to Kew, but felt that she was delaying its usefulness by keeping it in her possession. As delivered at Kew, it consisted of 53 oblong books of about 90 pages each, with a complete index. The books have since been bound in 17 volumes, and they contain approximately 3,000 coloured drawings, with about 500 in sepia, besides copious original notes and a large number of cuttings from the *Gardeners' Chronicle*, and other papers relating to Orchids. We have not succeeded in finding any published biography of the author, and only a few scattered facts concerning his life and his collections. But Mrs. Wolstenholme has communicated the following particulars:—John Day was born on February 3rd, 1824, in London, where his father, a City merchant, resided until 1840, when the family removed to a pleasant old house in Tottenham. After his father's death in 1851 he continued to live at the old home, and from there he married in 1853; but losing his wife in 1857, he sold the old home, and joined Mr. and Mrs. Wolstenholme at High Cross, Tottenham, the present residence of Mrs. Wolstenholme. Thither in 1858 he removed his large collection of cultivated ferns, to which he had for some years devoted much attention. Shortly afterwards he took up the cultivation of Orchids. He built suitable houses, and soon filled them with valuable plants. In course of time his collection became one of the richest and most famous of the period. Then his health broke down, and he visited the Mediterranean countries, which gave him a zest for travelling to more remote places, and he subsequently went to India, Ceylon, Brazil, and Jamaica. In 1881, previous to these longer journeys, his collection of Orchids was brought to the hammer, and realised £7,000. Three plants of Cypripedium Stonei var. platytænium fetched over £400. Subsequently he again became a collector of living Orchids, chiefly of rare and curious kinds. But latterly he devoted much attention to the dried ferns he had collected on his travels. He died on January 15th, 1888, and his second collection of Orchids was sold in May of the same year, when a small plant of the Cypripedium mentioned above brought the sum of £159 12s.

"For some years Mr. Day employed Mr. C. B. Durham, a miniature

painter, who exhibited largely at the Royal Academy and Suffolk Street galleries between 1828 and 1858, to make coloured drawings of Orchids; and from a note in the Kew Correspondence there were 300 drawings by this artist at a cost of £3 each. This collection, described as a very fine one, was sold by auction after Mr. Day's death, and is now the property of Mr. Jeremiah Colman, of Gatton Park, Surrey.

"We have mentioned Durham, because his name occurs here and there in Day's books, appended to a drawing of a flower or a plant, and because he appears to have given Day lessons in drawing. In Book iv., p. 10, for instance, there is the note appended to a drawing of Cattleya bicolor: 'My 9th lesson.' At p. 66 of the same book is a coloured drawing of Cattleya Schilleriana splendens, and the following note: 'Drawn by Mr. Durham, June, 1862; the first drawing he ever did here. This from the plant bought at Mr. Allen's sale at Stevens's in June, 1860, and the subject of Mr Durham's beautiful drawing in vol. vii., p. 11.'

"In 1863 Mr. Day himself began sketching, the first sketch being dated January 10, and he continued to make drawings up to within a few weeks of his death, January 15, 1888, the last but one bearing the date November 12, 1887, the last being undated. All of the earlier ones are in ink, but in many places he afterwards added coloured sketches, always giving the date when done. The earliest sketches are somewhat rough and diagrammatic, though botanically correct: but he improved rapidly, and his later work was admirably executed, both as to drawing and colouring. Day must have been very industrious at that period, for by the middle of February, 1864, he was half way through his seventh book, where (page 45) there is a coloured figure of Cypripedium purpuratum, with the following note: 'This is the first drawing I attempted in colours, using Gerty's paint-box. I was sufficiently satisfied with the result to buy a box for myself.' His satisfaction was quite justifiable, and his perseverance was soon rewarded with great success. Practically all he did after this was coloured. In December, 1882, he wrote to Kew applying for a pass of admission to the gardens before the general public in order that he might make drawings of the 'smaller, insignificant Orchids.' This was granted, and writing again in 1886 he mentions that he had drawn at least 70 that he had not seen elsewhere. His last Kew drawing is dated October 29, 1887. From time to time he presented living plants to Kew.

"The fact that the John Day collection contains drawings of a large number of the types of Reichenbach's species adds greatly to its value, as most of them are not otherwise represented at Kew, and probably in no other herbarium except the Reichenbachian shut up at Vienna, which, according to the terms of Reichenbach's testament, will not be accessible till 1914.

W. B. H."

HYBRID ODONTOGLOSSUMS.

THE annexed figures represent eight very beautiful Hybrid Odontoglossums which were exhibited by M. Ch. Vuylsteke at the last Temple Show, and are reproduced from photographs, taken by Mr. C. P. Raffill, of flowers given to us by M. Vuylsteke. The figures represent the flowers as nearly as possible half natural size, and as they were taken on isochromatic

Fig. 28. O. × ARDENTISSIMUM VAR. APOLLO.

Fig. 29. O. × FORMOSUM VAR. DIANA.

Fig. 30. O. × ARDENTISSIMUM VAR. EXIMIUM.

Fig. 31. O. × PERCULTUM VAR. ORION.

plates with a yellow screen they represent the colours in their relative degrees of brightness. They are all taken on the same scale, and thus are readily comparable. The flowers were cut from plants in the fine group to which the Lindley Medal was awarded.

O. × ARDENTISSIMUM VAR. APOLLO (fig. 28) is a very beautiful form, having a white ground, with a slight rosy suffusion on the sepals, and very dark violet-purple blotches. The plant bore an inflorescence of twenty-

one flowers. It is out of the original batch, derived from O. Pescatorei ♀ and O. crispum Franz Masereel ♂, but the blotches are less confluent than in the one figured at page 209 of our tenth volume.

O. × FORMOSUM VAR. DIANA (fig. 29) was exhibited as O. × percultum var. Diana, but bears such a close resemblance to O. × formosum—figured at p. 297 of our last volume—as to induce us to change the name, and M. Vuylsteke agrees with the suggestion. It is just such a flower as would be

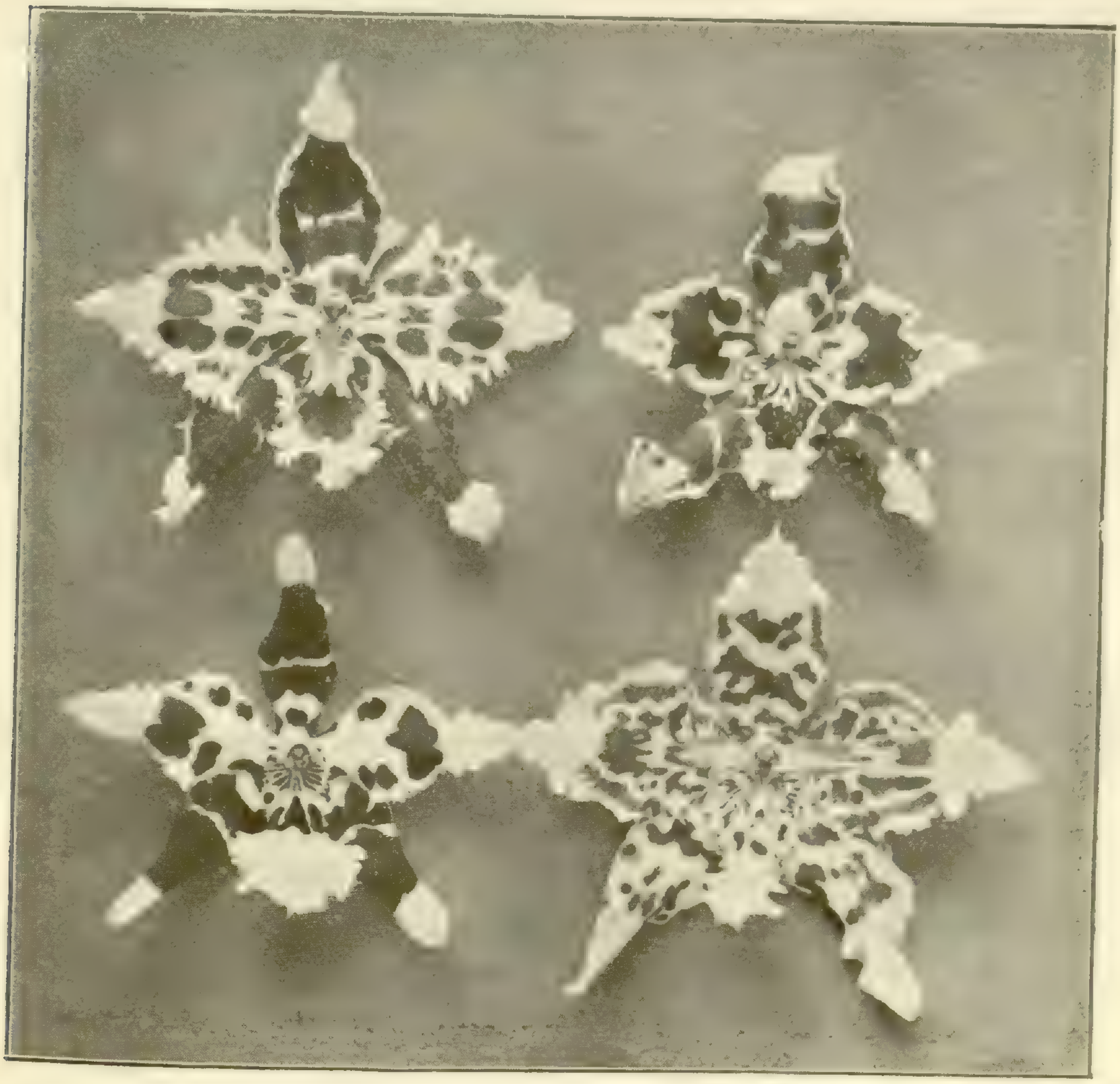

Fig. 32. O. × WILCKEANUM VAR. THALIA.

Fig. 33. O. × RUBICANS.

Fig. 34. O. × ALTUM VAR. BELLONE.

Fig. 35. O. × AMABILE VAR. GOLIATH.

expected from O. × Rolfeæ re-crossed with O. Pescatorei, being most like the latter, but with traces of the unmistakeable Harryanum crest and markings. The flower is white with bright purple blotches.

O. × ARDENTISSIMUM VAR. EXIMIUM (fig. 30) was exhibited as a seedling of unknown origin, under the name of O. × eximium, but from its general characters, including the column wings and crest, we believe it to be one of the polymorphic ardentissimum forms. The white ground colour is some-

what suffused with rose, and the much-confluent blotches may be described as plum-purple in colour.

O. × PERCULTUM VAR. ORION (fig. 31) is a very beautiful form which received an Award of Merit. It has rosy lilac flowers, closely barred and blotched with cinnamon-brown. It contrasts rather strongly with the variety Cybele, figured at p. 273 of our last volume. The parentage of this hybrid was originally recorded as O. × Rolfeæ × ardentissimum. This was in 1904, but, as O. × ardentissimum was only exhibited two years previously, the record requires confirmation.

O. × WILCKEANUM VAR. THALIA (fig. 32) is a very large and handsome form, having the typical toothed petals, yellow ground colour and dark brown blotches of the original natural hybrid, whose origin it demonstrates. The parents are O. luteopurpureum and O. crispum.

O. × RUBICANS (fig. 33) was exhibited as a seedling of unknown origin, and, unless it is a heavily blotched form of O. × nitidum (Harryano-crispum × Wilckeanum), we are unable to locate it. There is a trace of O. Harryanum about the crest. The ground colour is nearly white, and the very confluent blotches are deep red-purple, becoming rather more brown on the lip. It is a very handsome thing.

O. × ALTUM VAR. BELLONE (fig. 34) was exhibited as O. × ardentissimum × Hallii, though we should prefer to think of O. Pescatorei in place of the first-named, on account of the shape of the lip, and the white ground colour. The markings are deep chocolate. It is a very striking hybrid.

O. × AMABILE VAR. GOLIATH (fig. 35) is the giant of the series, and has an expanse of $4\frac{1}{4}$ inches across the petals. It is out of the batch of O. × Harryano-crispum recrossed with O. crispum, and has a cream white ground with numerous light cinnamon blotches.

SOCIETIES.

ROYAL HORTICULTURAL.

THE Great Summer Show was held at Holland Park, Kensington, on July 10th and 11th, by kind permission of the Countess of Ilchester, and was a delightful function in every respect. There was a very good display of Orchids, including numerous choice things, and the awards included four First-class Certificates, seven Awards of Merit, a Gold Medal and three Silver Cups.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young) staged a choice group, to which a Silver Cup was awarded. It included the handsome Zygopetalum × Roeblingianum in fine condition, Lælio-cattleya eximia, L.-c. H. Greenwood, Cochlioda Nœtzliana, Dendrobium Phalænopsis, Cattleya × Whitei Wigan's var., C. Gaskelliana and var.

alba, C. Warscewiczii, and some good C. Mossiæ, two beautiful examples of Platyclinis filiformis, Miltonia vexillaria superba, Odontoglossum × ardentissimum var. Joyce, some good Sobralias, Cypripedium × Helen, C. × politum, C. × Excelsior, Bulbophyllum Dearei, &c. A First-class Certificate was given to the remarkable Javan Bulbophyllum virescens, bearing an umbel of eight very large flowers, having long, caudate, greenish sepals, and the lip suffused with purple: and a Botanical Certificate to the pretty little Burmese Hemipilia amethystina, having the leaf prettily variegated with brown and green, and an erect spike of bright purple flowers.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), also received a Silver Cup for a large and handsome group, which was very artistically arranged. It contained some good Oncidium macranthum bearing numerous spikes, O. leucochilum, Epidendrum × Boundii, a fine example of E. prismatocarpum, several good Dendrobium Maccarthiæ, Spathoglottis × Colmani var. fulvissima, prettily marbled with rosy red, some good Cattleya Warscewiczii, C. Forbesii, a fine lot of Lælio-cattleya Phœbe, two plants of the rare Miltonia lævis, Odontoglossum Harryanum, a good O. tripudians, Lælia majalis superba with three fine flowers, the remarkable Stanhopea tigrina, Colax jugosus, Cochlioda Noetzliana, Epiphronitis × Veitchii, a good plant of Cirrhopetalum Cumingii, Bulbophyllum Lobbii, a nice lot of Cypripedium niveum, and cut spikes of some British Orchids, including Orchis maculata and Ophrys apifera. These and some of the smaller things were bedded in moss in front of the group, and were very effective.

W. P. Burkinshaw, Esq., Hessle, Hull (gr. Mr. Barker), received a First-class Certificate for Cattleya Warscewiczii White Queen, a plant which gained an Award of Merit on August 4, 1903. It has white sepals and petals, and a rich amethyst lip, with two large yellow eyes and some golden veining on the disc. We believe it is a white Hardyana, allied to the var. Countess of Derby.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), received a First-class Certificate for Cypripedium × calloso-Rothschildianum, a noble plant bearing two strong spikes, each with three magnificent flowers.

H. S. Goodson, Esq., Fairlawn, West Hill, Putney (gr. Mr. Day), received an Award of Merit for Cattleya × F. W. Wigan, Goodson's var., a very handsome form.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), received an Award of Merit for Brassocattleya Madame Hye (C. Harrisoniana × B. Digbyana), having pretty light rose flowers, with the disc of the lip light yellow and all the lobes somewhat fringed. He also

showed a good flower of Sobralia Sanderiana, and Miltonia vexillaria Hardy's var., a small rosy form, having a dark purple blotch at the base of the lip.

Gustav H. Müller, Esq., Rotterdam, received an Award of Merit for a handsome plant called Odontoglossum grande Zandaghe var., having large yellow flowers barred with dark brown on the lower part of the segments, but the cirrhose column wings were more suggestive of O. Williamsianum.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), sent Odontoglossum × Crawshayanum, Walton Grange var., having very large heavily blotched yellow flowers, with the ground colour of the lip white.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cattleya Gaskelliana var. Mrs. De B. Crawshay, having the flowers light rosy lilac throughout.

Messrs. Sander & Sons, St. Albans, staged a large and remarkably rich group, to which a Gold Medal was awarded. It was very effectively arranged with graceful palms and ferns. Among the more noteworthy plants it contained were a batch of seven Vanda Sanderiana, V. cœrulea gigantea, a vigorous plant with very large flowers, numerous good forms of Lælio-cattleya Martinetii and other Lælio-cattleyas, Nanodes Medusæ with sixteen flowers, two examples of the rare Lælia majalis alba, some good Dendrobium Dalhousieanum, Oncidium macranthum, leucochilum, crispum, dasytyle and phymatochilum, Brassia verrucosa, numerous good Odontoglossums, including O. Harryanum, O. × amabile Royal Sovereign, a large handsomely blotched form, O. Pescatorei, O. Uroskinneri, Lycaste Skinneri alba, Ancistrochilus Thomsonianus, a pretty light yellow form of Masdevallia coccinea, together with the type, M. coriacea, Renanthera Imschootiana, Warscewiczella velata, the handsome purple Bifrenaria tyrianthina, Epidendrum nemorale, E. atropurpureum Randii, a number of showy Cattleyas, three plants of Brassavola Digbyana, various good Cypripediums, Miltonia vexillaria Hardy's var., and numerous others, including some good Stanhopea tigrina, S. oculata, S. devoniensis, and three plants of the handsome Lacæna bicolor Sander's var., one of them bearing four long pendulous racemes. The latter plants were suspended in a way that set off the pendulous flowers to advantage. A First-class Certificate was given to Cypripedium Godefroyæ leucochilum Hodgkinsoni, a remarkably large and handsomely blotched form, and Awards of Merit to the pure white Aërides virens Sanderæ and Brassocattleya striata splendidissima, the latter having large white flowers with reddish veins, and a deep yellow disc to the lip, with a rosy suffusion in front.

Messrs. Charlesworth & Co., Heaton, Bradford, also staged a very fine group, to which a Silver Cup was awarded. Among the more noteworthy

exhibits were a lot of fine Lælio-cattleyas, the brilliant Sophrolælia læta Charlesworthii, a fine bank of Phalænopsis amabilis Rimestadiana, profusely flowered, P. violacea, numerous examples of the handsome Odontoglossum × Rolfeæ, Epidendrum nemorale, the rare Schomburgkia Thompsoniana, Cymbidium Huttoni, Masdevallia × Courtauldiana and calura, Bulbophyllum Lobbii, Miltonia Phalænopsis and vexillaria, the rare Cirrhopetalum pulchrum, Oncidium Gardneri, O. macranthum, O. Harrisonianum, a pretty hybrid between Cattleya Harrisoniana and C. Schilleriana, C. Loddigesii, C. Mossiæ Wageneri, C. × Hyades, a fine C. × Lord Rothschild, Brassocattleya Digbyano-Mossiæ, a very fine example of Cypripedium × Daisy Barclay, the rare C. præstans, Brassolælia Helen, and numerous other good things. One Award of Merit was given to Odontoglossum × Eurydice (cirrhosum × hastilabium), a handsome hybrid fairly intermediate between the two parents in shape, the sepals and petals whitish, barred with red-brown except near the apex, and the lip constricted in the middle, with the upper half white and the lower yellow barred with red-brown.

Messrs. Hugh Low & Co., Enfield, received a Silver-gilt Flora Medal for a fine group, including some good Cattleya Mossiæ, C. Gaskelliana alba, C. G. superba, C. Eldorado, C. Grossii, C. Warscewiczii Low's var., with the yellow blotches greatly reduced, a fine plant of Epidendrum prismatocarpum with 21 spikes, E. vitellinum, Lælio-cattleya Canhamiana alba, L.-c. Whateleyæ, Anguloa Clowesii and A. Ruckeri, Brassavola Digbyana, Oncidium pulvinatum, carthaginense and leucochilum, Notylia multiflora, Lycaste tricolor, Deppei and aromatica, Bifrenaria vitellina, Masdevallia muscosa, peristeria and trichæte, a nice batch of Cypripedium niveum, C. × macrochilum giganteum with four fine flowers, Sobralia Wilsoni, Dendrobium crystallinum album, Bulbophyllum Dearei, Cœlogyne speciosa, Odontoglossum Pescatorei, Vanda cœrulea, and others.

M. A. A. Peeters, St. Gilles, Brussels, sent a plant of the charming albino Cattleya × Mrs. Myra Peeters (Gaskelliana alba × Warneri alba).

Messrs. Stanley & Co., Southgate, sent the pretty white Cattleya Mendelii Quorndon House var.

Messrs. Dowel and Sons, Hammersmith, received a Bronze Banksian Medal for a good collection of Orchid pottery.

Orchid peat, leaf mould, and other Orchid requisites, were shown in the sundries tent by various exhibitors.

At the meeting held a week later (July 17th), at the Royal Horticultural Hall, Vincent Square, Westminster, Orchids were not numerous, the Committee giving only two Silver Banksian Medals, one First-class Certificate, and two Awards of Merit.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), showed Cypripedium × Mrs. Rehder, Glebelands var. (Argus × Rothschildianum), and Aërides Houlletianum, Fowler's var., a magnificent flower, which obtained a First-class Certificate. The latter had buff-yellow sepals and petals tipped with rose, and the front part of the lip bright-rose purple.

J. Bradshaw, Esq., The Grange, Southgate, N. (gr. Mr. Whitelegge), sent two plants of the Guatemalan Lycaste tricolor, one with sixteen and the other with twenty-four flowers, for which a Cultural Commendation was given. He also received an Award of Merit for L. tricolor albens, having very pale green sepals and petals and a white lip.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), showed a fine series of cut flowers of Sobralia, including the large and handsome S. Holfordi, the lip of which measured 4½ inches across, five flowers of the pure white S. macrantha Kienastiana, the fine S. Sanderiana, S. Amesiana, having large yellowish flowers tinged with rose, and other fine things.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), exhibited Cypripedium × Wottoni (callosum × bellatulum), having the flower tinted with rose and with some purple spots on the petals, Selenipedium nitidissimum, and another Selenipedium allied to longifolium.

C. G. Newkirchner, Uplands Road, Hornsey, sent a plant of Oncidium pumilum, bearing an erect inflorescence of small yellow flowers.

Messrs. Hugh Low and Co., Enfield, received a Silver Banksian Medal for an excellent group, containing a large Cattleya Gaskelliana, C. G. alba, C. Mossiæ, C. Mendelii, an example of C. Harrisoniana with twelve flowers, a form of C. H. alba with two flowers, Odontoglossum Schleiperianum citrinum, Læliocattleya Ingrami, and four plants of Odontoglossum Pescatorei.

Messrs. Stanley and Co., Southgate, were awarded a Silver Banksian Medal for an effective group, containing some fine examples of Cattleya Aclandiæ, C. Dowiana aurea, some good C. Mendelii, two plants of a natural hybrid between C. × intermedia and C. guttata, and other plants.

M. A. A. Peeters, St. Gilles, Brussels, received an Award of Merit for Cattleya × Mrs. Myra Peeters (Gaskelliana alba × Warneri alba), a beautiful pure white hybrid.

Messrs. Duchesne, Lanthorne and Co., Watermael, Brussels, showed a handsome form of Odontoglossum Vuylstekei, having the flowers white, with the sepals and petals heavily blotched with rose, and the lip bearing a large brownish blotch in front of the crest, with the margin white, and prettily fringed.

A third meeting was held on July 31st, in connection with the Hybridisation Conference, when a fine lot of exhibits was staged, the awards consisting of six medals, four First-class Certificates, and four Awards of Merit.

Major Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), staged a handsome little group, to which a Silver Banksian Medal was given. It contained three good plants of Cattleya × mollis, Brassocattleya Digbyano-Warscewiczii, four brilliant forms of Lælio-cattleya callistoglossa, L.-c. Clive, two good L.-c. Baroness Schröder, Cypripedium insigne Sanderæ × Maudiæ, a yellowish flower with some dull brown markings, and a Lælia (Jongheana × tenebrosa), having rosy purple flowers with a white throat. A First-class Certificate was given to Cattleya × Lord Rothschild, Westonbirt var., a very brilliantly coloured form, and Awards of Merit to Cattleya × Ashtoni Westonbirt var., and Sophrolælia Phroso (L. Jongheana × Sophrolælia læta Orpetiana), most resembling the pollen parent and having brilliant rose-purple flowers with a rich orange throat.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), received a Silver Banksian Medal for a small group of about fourteen well-grown Anæctochili, in which some good Dossinia marmorata and Macodes Petola were conspicuous. Lælio-cattleya Ingrami Ladymeade var., a fine very dark form, was also sent.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), received a First-class Certificate for Odontoglossum × crispo-Harryanum Rosslyn var., a very robust plant, bearing a stout spike of fourteen enormous flowers.

J. Gurney Fowler, Esq., S. Woodford (gr. Mr. Davis), sent the handsome Cypripedium × l'Ansoni, Læliocattleya elegans Broomeana, and Cattleya × Atalanta Fowler's var., the latter a very richly-coloured form which received an Award of Merit.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent two plants of Promenæa × Crawshayana, the original, having finer flowers than the other, being called var. Theodora. He also sent P. citrina and P. stapelioides, the two parents, and a plant of Odontoglossum purum, one of the flowers having a purple blotch on the lip.

Francis Wellesley, Esq., Westfield, Woking, sent Læliocattleya Phryne albens, having cream white sepals and petals, and the front of the lip light purple, L.-c. Miss Gilberta Blount (L.-c. epicasta × C. Dowiana aurea), rosy purple with an orange throat to the lip, and Cattleya Eldorado Orange Queen.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), sent Cypripedium × excelsior and Lælio-cattleya Ira (L. longipes × L.-c. Schilleriana).

Messrs. Sander & Sons, St. Albans, staged a very fine group, which gained a Silver Flora Medal. It contained some good Lælio-cattleyas, Cattleya × triumphans, C. × Prince Edward (Warscewiczii × Schilleriana), Stanhopea saccata, Catasetum Bungerothii, Epidendrum prismatocarpum, Brassavola Digbyana, Maxillaria venusta, Miltonia vexillaria J. Gurney Fowler, a large pale lilac form, about three dozen good examples of Disa grandiflora, Cypripedium × Black Prince (Euryades × Rothschildianum), a very dark hybrid, C. Rothschildianum, Ancistrochilus Thomsonianus, Oncidium longipes, Odontoglossum Uroskinneri, O. × formosum, a heavily blotched O. × loochristiense (derived from O. triumphans latisepalum crossed with a blotched crispum), another light yellow slightly spotted form said to be from the same seed parent crossed with O. × Wilckeanum, though the flower rather suggested O. × Adrianæ, a nearly white Masdevallia Harryana, &c. A First-class Certificate was given to a plant called C. Warscewiczii saturata, a very handsome thing, having the eye-like blotches nearly obliterated, but with a little yellow veining on the disc, and an Award of Merit to Odontoglossum × Fletcherianum (Edwardi × cirrhosum), most like the former, but having more acuminate segments, and the lip rose-coloured in front.

Messrs. Charlesworth & Co., Heaton, Bradford, also received a Silver Flora Medal for a very fine group, including several fine examples of Odontoglossum × Rolfeæ with its two parents, O. × amabile, O. × Ossultoni, and var. splendens, some good Cattleyas and Lælio-cattleyas, Phalænopsis × intermedia and its two parents, P. Aphrodite and P. rosea, with P. Esmeralda, P. fasciata, and P. amabilis Rimestadiana, Cycnoches Egertonianum viride, with a very long spike, Anguloa Ruckeri, Sophrocattleya Chamberlainiana, Epidendrum glaucum, Cymbidium Huttoni, Acanthophippium javanicum, Restrepia maculata, Pleurothallis microblepharis, Masdevallia × Imogene, the rare Oncidium stramineum, O. cucullatum, O. Forbesii, O. × Mantinii, Cypripedes, and other interesting things. A First-class Certificate was given to Cattleya × Claudian (Lueddemanniana × Schilleriana), a large and handsome hybrid, having rose-purple sepals and petals, and a strongly three-lobed lip, veined with rosy crimson.

Messrs. Hugh Low & Co., Enfield, received a Silver Banksian Medal for an interesting group, containing some good Cattleya Mossiæ, Gaskelliana, granulosa and Leopoldi, Broughtonia sanguinea, Promenæa stapelioides, Dendrobium × Leeanum enfieldense, Epidendrum Parkinsonianum, Odontoglossum Wallisii, Bulbophyllum Lobbii, Cypripedium hirsutissimum and various others.

Messrs. Stanley & Co., Southgate, received a Silver Banksian Medal for an attractive group, containing Cattleya Loddigesii and C. Harrison-

iana, C. Gaskelliana, Dendrobium Phalænopsis, Lælio-cattleya amandæ, several Odontoglossum Harryanum, O. citrosmum, Lælio-cattleya Adolphus, Cypripedium × vexillarium, C. × A. de Lairesse, C. × Youngianum, &c.

Messrs. Edgar & Co., Montrose, Derby Road, S. Woodford, showed a little group of Cypripediums, including C. glaucophyllum, C. Chamberlainianum, C. × Kimballianum, C. × javanico-superbiens, and several others.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A meeting of this Society was held at the Coal Exchange, Manchester, on July 12th, when there were present :—E. Ashworth, Esq., in the chair, and Messrs. Ashton, R. Ashworth, Cowan, Cypher, Keeling, Leemann, Parker, Rogers, Ritchie, Shill, Smith, Stevens, Thorpe, Upjohn, Ward, Williamson, and Weathers (Hon. Sec.). There was a good display of Orchids.

W. Thompson, Esq., Stone (gr. Mr. Stevens), received a Gold Medal for an exceptionally fine group of plants, consisting chiefly of Odontoglossums, but also containing some good Cypripedes, C. × Daisy Barclay, (Godefroyæ leucochilum × Rothschildianum), and C. Godefroyæ leucochilum var. Hodgkinsoni, both receiving First-class Certificates, and C. × Sheila (Harrisianum superbum × triumphans) an Award of Merit. A lot of finely grown and flowered examples of Cochlioda Nœtzliana received a Cultural Certificate.

J. Charlton Parr, Esq., Grappenhall Heyes, near Warrington (gr. Mr. Marsterton), showed an exceedingly good collection of Disa grandiflora, to which a Cultural Certificate and Special Vote of Thanks were awarded.

Dr. A. Hodgkinson, Wilmslow (gr. Mr. Woore), obtained a First-class Certificate for Cypripedium Godefroyæ leucochilum var. Hodgkinsoni and C. niveum Grange variety.

E. Ashworth, Esq., Wilmslow (gr. Mr. Holbrook), received Awards of Merit for Cattleya Mendelii var. Oakes Ames, and Dendrobium × Leeanum.

R. Ashworth, Esq., Newchurch (gr. Mr. Pidsley), received a Bronze Medal for a small group, including Cypripedium × Britannia, the new hybrid Odontoglossum × ashlandense (polyxanthum × Adrianæ), and others.

P. Smith, Esq., Ashton-on-Mersey (gr. Mr. Kitchin), also received a Bronze Medal for a good miscellaneous group, in which Cattleya × Hardyana Haddon House var. was specially noteworthy.

Mrs. S. Wood, Glossop (gr. Mr. Gould), showed a good collection of plants, containing some fine hybrid Cattleyas, a Bronze Medal being awarded.

Max Isaac, Esq,, Liverpool, showed a fine example of Lælio-cattleya callistoglossa, a Vote of Thanks being given.

Messrs. H. Low & Co., Enfield, showed Cattleya Gaskelliana alba, which received an Award of Merit.

A FLOATING ORCHID (HABENARIA REPENS).

THIS interesting species is figured in the issue of the *Journal of the New York Botanic Garden* for April last (p. 112), and Dr. H. H. Rusby contributes the following very interesting note about it :—

"Many species of Habenaria are found in damp localities, and a few actually grow in water, but so far as known to the writer this is the first record of one growing in a floating position.

"In the delta of the Orinoco there occur many lakes or pools, connected with the river by channels in which the water flows only when changes of level occur in the main stream. During the rainy season the water flows into them from the river, and they acquire a much greater depth than in the dry season, when, in fact, many of them dry up altogether. These pools offer rich harvests to the collector of aquatics. In some of them the plants are all rooted in the mud, while in others, where there is little current or other violent disturbance attendant upon the change in level, much floating vegetation is found. One of these still pools existed at the back of a hill facing the river, upon which was built the one house that now constitutes Sacupana, where Mr. Squires and myself spent part of the collecting season of 1896. The shores of this pool were often visited by us, but no favourable opportunity occurred for exploring its surface until one day in May, shortly before our departure. On this afternoon we took a small cedar canoe and explored the narrow tortuous bayou that connects the pool and the river running along the eastern base of the hill. The river had already risen some four or five feet from its lowest level. Few plants were found in the bayou until we had reached a point nearly a mile from the river, where we found the channel completely filled, and our progress stopped by a heavy sedge, which appeared to grow from the shallow water at each side of the bayou. . . .

"A short distance beyond this obstruction the bayou turned sharply to the west and broadened out into a small pool between a quarter and a-half mile in length, and with an average width of perhaps a hundred yards. Probably half of it consisted of open water, which swarmed with fish and reptiles. . . . On the surface, which was not clear, the greater portion was thinly covered with slender and sparsely leafy grass stems, which rose to a height of about six feet above the surface. . . . The remainder of the pool was covered with floating aquatics and floating leaves, but none

of them in bloom at the time. In the midst of a floating mass of this kind, perhaps fifty yards in breadth, many yards from the shore, and exposed to the bright sunshine, were many plants of a Habenaria that has been determined by Mr. Rolfe as H. repens, Nuttall. They grew singly for the most part. Occasionally several would stand sufficiently near together to have their roots intermingled, but I did not notice any apparent connection. The plants grew in every case where slender-stemmed aquatics, such as Potamogeton or Myriophyllum, grew so thickly as to furnish a support. A rhizome about an inch long and an eighth of an inch thick was imbedded among the plants, rising obliquely from them, and at the top of this the stem grew erect, in no case much more than six inches above the surface. The yellowish white roots, well clothed with short and thick root-hairs, did not dip down into the water, but spread out almost horizontally through the mass of vegetation, a considerable body of which was lifted up when the Habenaria plants were raised. With a little shaking they were readily drawn out. The inflorescence was of a light green colour, the leaves of a rather light, but brilliant green, and suberect.

"The plant would have been more carefully examined had it not been found just as we were about to make a hasty return. It did not occur to us to investigate its germination, which we might have done, as many plants were in fruit. It seems reasonable to suppose that the seeds germinate while in the pods.

"It is not improbable that the plant is common in such localities, but we had no other opportunity of finding it. It certainly did not grow along the shore, nor in the mud, for such localities, there and elsewhere, were often searched, so far as this locality is concerned, therefore, the plant grows only as a natant."

CATTLEYA × LUCIENIANA.

SOME further light is now thrown on the question of the origin of Cattleya × Lucieniana, so recently discussed (page 208). At the Holland House Show a hybrid Cattleya was exhibited by Messrs. Charlesworth & Co. labelled "C. Harrisoniana × Schilleriana." It was originally purchased on the Continent with this record, which has every appearance of being correct. The plant is clearly a seedling, as it still retained the tiny seedling growths, and the flowers unmistakably combined the characters of the two species mentioned. Though most like the former in colour, the petals are distinctly undulate, and the lip is broad with ample side lobes, and this, with the distinctly dwarfer habit, shows the influence of the other parent. The front lobe of the lip is crisped, and suffused with purple; the side lobes are cream yellow, slightly suffused with purple towards the margin, while some of the characteristic Harrisoniana markings occur on the disc. It

appears to have the same origin as the natural hybrid C. × Lucieniana, and as the two supposed parents are not yet known to grow together it is clear that we have yet something to learn about their distribution. The fact is we have still much to learn about the distribution of Brazilian Cattleyas.

R. A. R.

THE HYBRIDIST.

LÆLIO-CATTLEYA × SAXA.—A flower of a brilliant little hybrid is sent from the collection of J. H. Grogan, Esq., Slaney Park, Baltinglass, Co. Wicklow. Mr. Grogan writes:—"The cross is C. Bowringiana × C. Schilleriana, and the plant is a little one given me by Mr. Moore, of Chardwar, Bourton-on-the-Water. It is giving three flowers this year, but when strong will doubtless give many more. I think it is a little gem." The flowers are rather larger than the seed parent, the petals measuring over 2¼ inches long, while the shape, the undulate petals, and the rich colour of C. Schilleriana are all written large on it. The front lobe of the lip is broadly rounded, somewhat bilobed at the apex, and of the richest crimson; the side lobes sharply angled, rather flattened in front, and rich crimson at the apex and margin, while the base and disc are deep yellow, with numerous radiating crimson veins. The sepals and petals are uniformly rich crimson, the petals being an inch broad. It should develop into a very handsome thing.

LÆLIA × NORA.—A pretty little hybrid raised in the collection of E. F. Clark, Esq., Chamonix, Teignmouth, from Lælia cinnabarina × L. xanthina. The flower sent is from a stray seedling, found on a withered Cypripedium leaf, and was not suspected to belong to the same cross until it flowered, when its origin was apparant. Two seedlings only appeared where the seed was sown, and these have not yet flowered. The spike has three flowers, fairly intermediate in character. The sepals are narrowly oblong, 1¾ inches long, and the petals similar, and scarcely exceeding the petals in breadth; while the colour is very deep yellow. The lip is three-lobed; the front lobe rounded, undulate, with a recurved acute apex, and the side lobes broadly rounded and undulate. The colour is bright yellow, with about five narrow brown lines on the disc. Mr. Clark states that the flower seemed exceedingly like xanthina when it first opened, and that the plant shows less of the cinnabarina character than usual. It is a bright and attractive little hybrid, and should develop into a good thing.

SOPHROLÆLIA × PHROSO.—This is a brilliant little hybrid, derived from Lælia Jongheana ♀ and Sophrolælia læta Orpetiana ♂, from the collection of Major G. L. Holford, which received an Award of Merit from the R.H.S. on July 31st. The sepals and petals are brilliant deep rose-purple, the latter measuring over an inch broad and extending three inches

from tip to tip. The lip is over 1½ inches long, somewhat three-lobed, undulate, and bright purple with an orange-yellow throat and disc, the latter bearing several longitudinal keels, much dwarfer than those of the seed parent. It shows unmistakeable evidence of its origin, the shape and brilliant colour being largely that of the seed parent, while the enlarged size and richly coloured throat and keels are derived from the Lælia. The habit is dwarf, as in both parents, and altogether it is a charming little plant, though not yet fully developed.

LÆLIA × DAPHNE.—This is another hybrid from Lælia Jongheana, of which a flower was exhibited by Major Holford on July 31st, the second parent being L. tenebrosa. It is most like L. Jongheana in shape, having elongated spreading sepals and petals, the latter being an inch and a quarter broad and having an expanse of seven inches, while the colour is bright lilac purple. The lip is over 2¾ inches long, with a long convolute base, and somewhat three-lobed and expanded above, the colour being lilac-purple with somewhat darker veins and a nearly white throat, with very slight traces of the Jongheana keels on the disc. It is somewhat curious that the combination of the orange yellow throat of L. Jongheana with the blackish purple throat of L. tenebrosa should have resulted in a nearly white throat in the hybrid, though something approaching it is seen when the last-named parent is combined with Cattleya Harrisoniana. It is a very distinct hybrid.

ORCHIDS IN SEASON.

THREE beautiful Cattleyas from the collection of Major G. L. Holford, Westonbirt, Tetbury, serve to remind us how completely the numerous hybrids have eliminated what was formerly known as the "dull season." C. × Lord Rothschild Westonbirt var, is an extremely fine and richly coloured form which has just received a First-class Certificate from the R.H.S., while C. × Ashtoni Westonbirt var. has gained an Award of Merit. The latter has petals with an expanse of six inches, and nearly two inches broad, while the colour is bright lilac-rose. The lip is nearly entire, with a large amount of light yellow on the disc, and some bright amethyst in front.

C. × mollis has also a nearly entire rich purple lip with a large yellow throat, and bright rosy-lilac sepals and petals. The plants exhibited were splendidly grown.

A charming variety of Cattleya Gaskelliana, called Seampston Hall Beauty, is sent from the collection of W. H. St. Quintin, Esq., Seampston Hall, Rillington, York, by Mr. F. C. Puddle. It is of good size and shape, and pure white in colour with the exception of a suffused light purple blotch in front of the yellow disc of the lip.

An interesting little group is sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Haddon. It contains flowers of the beautiful Cattleya Eldorado crocata, Lælia xanthina, Epidendrum prismatocarpum and cochleatum, Odontoglossum Schlieperianum and bictoniense, Masdevallia ionocharis, M. civilis, M. Reichenbachiana, Oncidium macranthum, O. leucochilum, O. præstans, Maxillaria tenuifolia, and Chysis lævis.

Two forms of the handsome Barkeria spectabilis are sent from the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, by Mr. White, one being much larger than the other. It is a very handsome species when well grown, and the larger one is considered to be an exceptionally good variety.

A flower of a Brazilian Cattleya sent by the Marquis de Wavrin, Chateau de Ronsele, Somerghem, Belgium, proves to be the rare C. Schrœderiana, Rchb. f., now believed to be a natural hybrid between C. dolosa and C. bicolor. Its history was given at p. 314 of our last volume.

Three good flowers of Paphiopedilum barbatum are sent from the collection of Gen. Hadden, C.B., Rossway, Berkhamstead, by Mr. S. Aish, who remarks that the plants have flowered three times during the last twelve months. The plants were purchased a year ago in flower, and when flowering was over they were top dressed, and then flowered again in December. These were pollinated with other varieties, and capsules were formed, but now another lot of buds have appeared, most of which have been removed, not to exhaust the plants. Those which have been allowed to flower again are, however, just as healthy as the others.

A particularly fine and well-coloured form of Dendrobium Wardianum was some time ago sent by Mr. F. J. Smith, The Gardens, Smalley Hall, Derby. It was purchased last year as a small plant with two bulbs, but now one of them has produced much smaller flowers than the other, and it is suggested that there may be two plants in the pot.

LÆLIA GRANDIFLORA ALBA.

Two plants of this chaste and beautiful albino were included in Messrs. Sander's group at the Holland House Show of the R.H.S., and were greatly admired. Its history has already been given (*Orch. Rev.* ix, pp. 202, 310). Considering that it has been known since 1880 it is remarkable how rare it is in Europe—indeed we had not seen it alive before, and do not know of its having been previously exhibited here, though several plants are known in America. The flowers are pure white throughout, and in this respect alone it differs from the type, with which it forms a charming contrast. A figure of it has just appeared (*Gard. Chron.* 1906, i. pp. 44, 45, fig. 20), as L. majalis alba.

R. A. R.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during August, on the 14th and 28th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. The subjects of the special competition on these dates are:—Aug. 14th, Laelio-cattleya elegans and its hybrids; Aug. 28th, Cattleya Warscewiczii and its hybrids.

The next meeting of the Manchester and North of England Orchid Society will be held at the Coal Exchange, Manchester, on August 16th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

A photograph of the beautiful Cattleya labiata alba is sent from the collection of Clement Moore, Esq., Hackensack, New Jersey, U.S.A., through Mr. A. Dimmock, who remarks that it is of fine shape, and very distinct, on account of the usual yellow throat being almost suppressed, while its long fringed lip and fine texture make the variety highly prized by its owner, who is one of the most successful growers of Cattleyas in America. The spike bears four flowers. A photograph of Cattleya × Hardyana is also sent, showing a three-flowered inflorescence, which is remarkable for the fact that one flower shows two distinct eye-like blotches in the throat, recalling those of the C. Warscewiczii parent, while in the other two flowers they are absent. In each case the Dowiana veining in the throat is very marked.

A flower of the handsome Brassocattleya Madame Hye (Cattleya Harrisoniana × Brassavola Digbyana), to which an Award of Merit was given at the Holland House Show, is sent from the collection of Major Holford, Westonbirt, Tetbury, by Mr. Alexander. It is most like an enlarged edition of the former, the flower having an expanse of 5½ inches across the petals. The colour is rosy lilac, with the disc of the strongly three-lobed lip light yellow. The front lobe is 1½ inches broad, and somewhat reflexed, while all the lobes are somewhat fimbriate. It is very distinct from the Brassocattleyas which have previously appeared.

Odontoglossum × Fletcherianum is a very interesting hybrid between O. Edwardii ♀ and O. cirrhosum ♂, exhibited by Messrs. Sander & Sons, St. Albans, at the R.H.S. Meeting on July 31st, when it received an Award of Merit. It has the general habit and inflorescence of O. Edwardii, as well as its dark purple colour, but the sepals and petals are more acuminate, and the lip is modified in shape. The colour shades off to rose at the acute apex, and the crest is deep yellow.

Two other interesting seedlings were exhibited by Messrs. Sander, the first derived from O. triumphans latisepalum, the Bogota form of the species, crossed with a spotted crispum. The flower is light yellow, heavily blotched with brown; in fact it is a well blotched form of O. × loochristiense. The other was from the same seed parent, crossed, it is said, with O. × Wilckeanum, though the broad segments and compact shape suggest O. × Adrianæ. The colour is light yellow, with a few light brown spots on all the segments.

ORCHID PORTRAITS.

CATTLEYA MOSSIÆ REINECKEANA, THE BARON.—*Journ. Hort.*, 1906, ii. p. 27, with fig.

CYPRIPEDIUM GODEFROYÆ HODGKINSONI.—*Gard. Chron.*, 1906, ii. pp. 32, 36, fig. 16.

LÆLIA MAJALIS ALBA.—*Gard. Chron.*, 1906, ii. pp. 44, 45, fig. 20.

LÆLIO-CATTLEYA PHŒBE, GATTON PARK VAR.—*Garden*, 1906, ii. p. 17. with fig.

ODONTIODA VUYLSTEKEÆ.—*Gard. Chron.*, 1906, ii. p. 47, fig. 21, 22.

ODONTOGLOSSUM × QUEEN ALEXANDRA VAR. CARMEN.—*Gard. Chron.*, 1906, ii. p. 13, fig. 7; *Journ. Hort.*, 1906, ii. p. 51, with fig.

PAPHIOPEDILUM GLAUCOPHYLLUM. J. J. SM.—*Bot. Mag.*, t. 8084.

SOBRALIA HOLFORDI.—*Journ. Hort.*, 1906, ii. p. 75, with fig.

ZYGOPETALUM BURTI.—*Journ. Hort.* 1906, ii. p. 3, with fig.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired* (*abroad, reply postcards should be used*). *Subjects of special interest will be* ***dealt with in the body of the work***].

I. B. Epidendrum odoratissimum, Lindl., and Bulbophyllum saurocephalum, Rchb. f.

J. H. G. It would appear that any solution capable of destroying the fungi in the compost would also kill the symbiotic fungi on the roots, which are of such importance, and for this reason we cannot recommend its use for this particular purpose.

E. D. B. Eria alba, Lindl.

Photographs received with thanks. A. D., Ch. & Co.

E. W. Assuming the facts to be as stated, the important point would be to encourage the growth of these special fungi in the houses, by providing the necessary conditions, and thus assist the young seedlings over the early stages. It would also serve to explain why the pots in which vigorous young seedlings are growing form a good seed bed.

X. Several Brazilian Oncidiums are certainly natural hybrids, but the facts are not yet as well known as in the case of Odontoglossum. It is always important to know the importations out of which they come.

W. H. B. This and several other matters are unavoidably postponed.

J. F. and others. The work is making steady progress, and we will report shortly.

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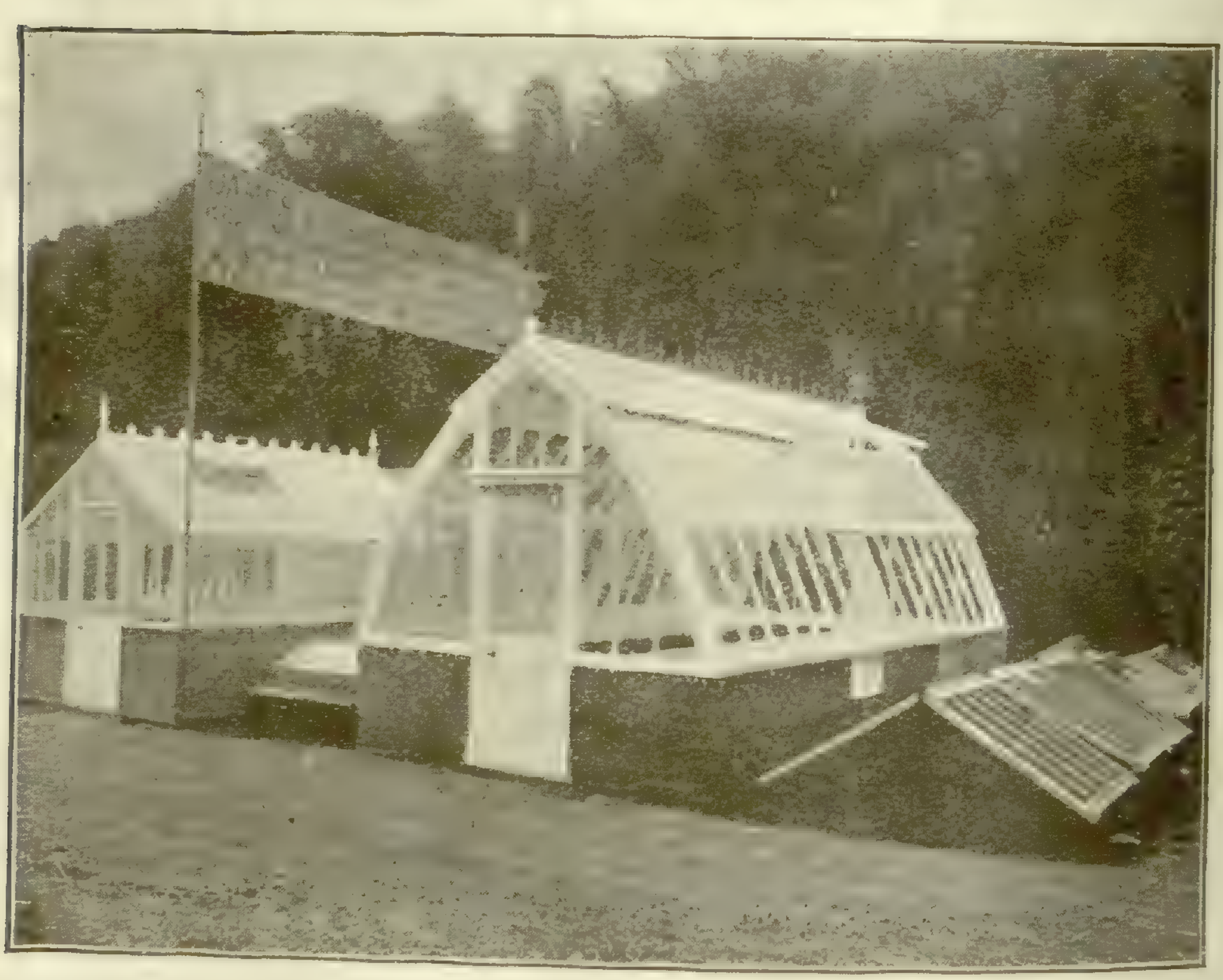

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THE ORCHID REVIEW.

VOL. XIV.] *SEPTEMBER*, 1906. [No. 165.

ORCHID-GROWING AND COLLECTING IN JAVA.

BY E. CONNELL, Alas Bezoekie, Loemadjang, Java.

IF the growing of Orchids in their native habitats is a much simpler process than their cultivation in Europe, it is not unattended with drawbacks, if pursued on an extended scale. Speaking more particularly of this "land of eternal Summer," Java, there is no close time for insects and other pests. Ants, aphis, brown and white scale, caterpillars, snails, green fly, and a species of bug which works sad havoc upon Phalænopsis of all kinds, are at work from January to December, while a small black ant in thousands is to be found on every species, making Vandas, Aërides, and Saccolabiums, more particularly, a happy hunting ground. Planting, potting, mossing and tying must be done personally, or under close supervision, if any measure of success is to be obtained, for the Javanese gardener has no appreciation of flowers, plants or Orchids for their own sake, looking upon the latter as parasitic useless weeds.

On the other hand no expensive houses are required, and fogs are unknown, unless you can so call a white mist which floats up from the valleys occasionally. This is generally accompanied by a fine drizzling rain, and is excellent when not an all day performance. Then a collection of native sorts is easily acquired, if the cultivator is possessed of any enterprise. Of course all parts of Java are not equally prolific, the low, dry and hot jungles yielding fewer Orchids of all kinds than the higher, moister, cool slopes.

At this elevation, 2,700 to 3,500 feet above sea level, in the district of Probolingo, East Java, situated, as I am, on an isolated coffee, tea and cinchona estate, surrounded by forests and jungles, abandoned Government coffee estates, in a cool moist climate, 57° to 80° F., shade temperature, it is perhaps an ideal place for the keen collector and lover of plants, ferns and local species of Orchids. There, almost at my door, are to be found many varieties of Vanda suavis, Arundina speciosa, Bletia amboinensis, Cymbidium aloifolium, and ferns, from the tiny filmy kinds up to Angiopteris erecta, with fronds over ten feet long, tree ferns in all stages of growth, up to magnificent specimens of between twenty and thirty feet, to clumps of Davallia tenuifolia, growing on western slopes, and waysides.

The growing of Orchids in the open—and this account refers more particularly to the species of my district—has necessitated my converting a large part of the garden into a miniature forest, and the method I employ is to plant cuttings of quick-growing trees of the Erythrina species (these cuttings are about six feet long, and are planted about two feet apart in the rows), mixed with Albizzia moluccana, A. stipulata, Brugmansias, and cuttings of forest trees which will form a quick, leafy, though not too dense, crown. Each row is about six feet apart, and occasionally belts or hedges of double scarlet and double salmon coloured Hibiscus are run between, about six feet high, for low shade and wind breakers, the wind often blowing almost a hurricane, for a day or two, at infrequent intervals.

Upon these trees, so soon as their growth gives sufficient shade, are tied, with areca palm fibre (Arenga sacchifera)—known in England I believe as Goematti fibre—Aërides virens, Saccolabiums, Phalænopsis amabilis (grandiflora), Cœlogyne speciosa—of which latter there appears to be many varieties—Cirrhopetalum biflorum, Vanda suavis, V. helvola, V. limbata, several Cymbidium species, names unknown (one very uncommon variety has round cup-shaped green flowers, with chocolate spots, and the leaves grass-like and thin), Bulbophyllum Lobbii, three pretty Dendrobium species, unnamed here, and the more botanical order of Dendrobes, such as crumenatum and secundum, Erias of sorts, and odd Cleisostomas.

In pots or planted out in the ground are Phaius maculatus flavus, a very showy terrestrial, with sulphur yellow flowers, and a reddish brown frilled lip, P. grandifolius, Cypripedium javanicum, Bletia amboinensis, Calanthe veratrifolia, C. vestita rubro-oculata and luteo-oculata, Cymbidium lancifolium, and Calanthe Ceciliæ, with large violet flowers. Cymbidium lancifolium is the only terrestrial Cymbidium I have seen here. Calanthe vestita rubro-oculata is not a true terrestrial, growing for the most part on fallen tree trunks, in an advanced stage of rottenness. Also high up in an enormous forest tree grows Spathoglottis plicata, with white and light and dark purple varieties. Bletia amboinensis has drooping white flowers, with a rolled-up lip of pale yellow, and a faint blotch of purple underneath. This is a very robust plant, with fluted stems, but no pseudobulbs, and alternate, large, plicate leaves. Chrysoglossum nebulosum is a pretty little plant, with dull green plicate leaves, spotted with dark violet, and is attractive for its foliage. Then there are several unnamed sorts, with unattractive flowers, and Macodes Petola var. argentea, Goodyera glauca and Microstylis javanica, which they told me at Buitenzerg were new varieties.

I always submit specimens there for naming, and occasionally send to the Herbarium any new botanical specimen I find which would have no interest to a collector. Of this latter class there are many I do not trouble to grow. Goodyera reticulata, G. colorata, Anœctochilus Reinwardtii,

Hetæria sp., velvety green with three silver bars or veins, and two species of Anœctochilus, whose names were not given to me, also form part of the terrestrial department, but I regret to say that I cannot keep these little jewels alive. They are all attacked one after the other by a small maggot, which eats the hearts of the stems away, and nearly all are now dead. The only other local terrestrial so far is Arundina speciosa, which has tissue-paper-coloured flowers, with a blotch of bright yellow and purple on the lip. This Orchid only has from one to two flowers open at a time, which last about two days. I almost forgot Dendrobium macrophyllum, a plant of which I obtained in the district, where it is very rare, though common enough, I believe, in the west of the Island. The above form the best of the local species. There are many others, but they would have no interest to anyone but a botanist, and belong to the "Botanical specimen" order.

In addition to the plants growing on living wood, many are hanging up in baskets, balls of moss and blocks of wood, under lemon and orange trees, and other shade-giving shrubs in the garden. I make use of every-thing, from Avocado pear trees to Crotons and Allamandas. Others find a more or less happy home under a rough bamboo trellis roof, interlaced with palm and cane leaves on rough stagings, and trunks of tree ferns cut into various lengths.

It is somewhat difficult here to keep a mixed collection of Orchids in healthy condition, without going to a good deal of expense. Mostly the bungalows are roofed with corrugated iron, which during the heat of the day gets very hot, and forms also too dense a shade for Orchids. My verandah on the east side is thirty-six feet long and six feet wide, but I have extended this at a lower level for four feet with planking, roofing it over with areca fibre and bamboo trellis, which admits rain, light and sun, though the latter is somewhat tempered, and does no harm. Facing this is a gravel path, and beyond that again more tree cuttings, Brugmansias, and lemons, which are now just at a height to be of use, and have all sorts of Orchids hanging up on the branches.

Here, and on the verandah extension above mentioned, I keep my mixed collection of species, which comprises several Cattleyas, Odontoglossums, Lælias, Oncidium concolor, O. flexuosum, O. Kramerianum, Lycaste Skinneri, L. aromatica, Bifrenaria Harrisonæ, Dendrobium aureum (Phillipines), D. Phalænopsis, D. densiflorum, D. superbiens (Thursday Island), D. superbum (Borneo), Cœlogyne Dayana, C. pandurata, C. asperata, C. peltastes, Vandas suavis, tricolor, helvola, limbata, spathulata, Hookeriana, teres, Arachnanthe moschifera, Cypripedium javanicum, Mastersianum, glaucophyllum, Phalænopsis amabilis (West Java), P. amabilis Rimestadiana (East Java), P. sumatrana, P. violacea, Aërides virens, Saccolabium Blumei—one or two white-flowered—Grammatophyllum speciosum, and

a few other Burmese, Indian, and Australian Dendrobes, with, of course, a specimen of all the Java sorts, named and unnamed, of which there are several very pretty plants. When I say unnamed, I mean that they are not known here.

Mixed up with these Orchids are several kinds of palms, Cycads, Hoyas, Sansevieras, Crinums, and dozens of beautiful ferns, in fact I might say there are fifty to one hundred species to choose from. Asparagus, Stephanotis, Allemandas, Aristolochia elegans, and ferns, form some of the creepers, which are useful for shade as well as ornamental. As this shade becomes too dense, it is an easy matter to thin it out, or prune the trees in the open.

The South American Orchids are for the most part now transferred to pots and baskets, and a few are attached to trees, taking care of themselves. Although imported last December, only one has bloomed, namely, Lælia harpophylla, though many are vigorous, such as Odontoglossum grande, Lælio-cattleya elegans, Cattleya Trianæ, C. Harrisoniana, C. Mossiæ, and C. Bowringiana. A few that have hung fire are Lælia flava and Cattleya amethystoglossa, whilst Cattleya Skinneri and gigas departed this life without a struggle. When I get any more I mean to attach the whole lot to living trees, without any other material except perhaps a little moss—and very little of that—but as pot or basket subjects they will not succeed in the west monsoon, but must be under cover, as the drenching rains rot the roots and bulbs in no time.

In addition to growing Javan Orchids on special trees—and I may say from my own experience that this is far and away the best way out here, as when once established the plants require little or no attention, sending their roots up and down the stems and deriving apparently all the nourishment they need from the bark, and doing well—many kinds do well in a ball of moss, such as Vandas, Aërides and Saccolabiums. For myself, having got the plants home fresh from the forest, I shorten back all long stringy roots to a length of say six inches, and take some clean moss—the sort that clings to trees and lives upon moisture is best—make a loose ball or pad with a little areca palm fibre, and bind these shortened roots loosely on the *outside* with rough string made from the same fibre, dip in rain water, if in fine weather, and hang up in a light, airy situation. No direct sunlight should reach the plants. They then quickly form new roots, attaching the old ones to the moss, and penetrating into the ball freely. The old roots must always be exposed, as covering them up rots the whole base of the plant.

Phalænopsis are best grown on living wood also, or plain hard wood blocks or branches. Sometimes they will prove a success in baskets with a little moss that will grow on dead wood, but this Orchid is not easy to manage. Often with strong healthy roots running up and down the stems

of trees, to which it is attached, for yards, it loses all its leaves and has a bunch of roots and a flower spike varying from one to three feet in length, which blooms away gaily, but the absence of leaves greatly detracts from the appearance of the plant. This is also noticeable in the native habitat of the plants on the teak tree, in the dry season, the broken, shrivelled leaves giving the plants a sorry-looking, lifeless appearance, though they have never been disturbed in their growth at any time. Many of mine, though fully established, lose leaf after leaf, though the cause is not often apparent. A very destructive pest bores holes in the base of the leaf, and often rots them completely there, though the rest of the leaf is green and perfectly healthy-looking. Another pest sucks the green colouring matter out of the leaves, spoiling their appearance completely.

This Orchid—as also Aërides and Saccolabium—has a great affinity for hard-wooded trees, especially the Teak tree, known locally as "Djati." This tree has large coarse leaves which protect the Orchids from both sun and rain. I have seen eight or nine different Orchids all growing upon this one species, Phalænopsis, Cymbidium, Aërides, Saccolabiums, and Dendrobes. As a rule the Phalænopsis are on the lower part of the trunk, and the Vandas and Aërides on the higher and more exposed branches. This teak tree is grown in rows along the Government roads, mixed up with Tamarind and other species, but all the Phalænopsis have been well exploited, at any rate in this district. I had at one time about 2,500 of the large-flowered variety, broad-leaved, narrow-leaved, and with flowers varying from three to five inches across, though the latter size is unusual.

(To be concluded.)

THE HYBRIDISATION CONFERENCE.

(Concluded from page 228.)

A PAPER read on Tuesday afternoon, July 31st, on "The Influence of the Parents on the colour of the Hybrid," by Mr. F. J. Chittenden, though not dealing directly with Orchids, contained some conclusions that will be of interest to Orchidists. The lecturer spoke of a widely spread belief that the colour of the flowers of a hybrid are more influenced by the pollen parent than the seed bearer, and said that upon this belief was founded the advice to choose the flower with the most brilliant colouring as the pollen parent. This influence, on the other hand, had been denied, and many examples had been cited to prove the converse. In order to test the matter he had taken the records of 183 hybrids (mostly first crosses), of which the parentage appeared to admit of no doubt, and compared the colour of the hybrids with those of their parents. These hybrids belonged to 67 genera. Out of the total of 183, 19 had parents whose flowers were alike in colour, and of the remainder 42 showed a predominance of the

coloration of the pollen parent in their flowers, 46 showed a predominance of the seed bearer, 73 were intermediate in colour, and three had characteristics possessed by neither parent. It was therefore concluded that no general rule of dominance, so far as the coloration of the hybrid is concerned, can be formulated.

The Conference on Wednesday, August 1st, was limited to the morning sitting, and included no Orchid paper, but one on "The bearing of Hybridisation on the Origin of New Forms," by Dr. E. Tschermak, of Vienna, has a bearing on Orchidology. He remarked that up till a few years ago it was the opinion of scientists that hybridisation was of no great importance in the production of new forms with reference to a study of the descent or pedigree, though practical breeders had long learnt to regard scientific crossings as a means which in certain cases influenced the production of apparently new forms. In any case no general laws seemed to exist. In order to secure the commercial benefits of lucky accidents, the cloak of secrecy was by many breeders thrown over the origin of their new products. Consequently even now many forms were wrongly described as hybrids or bastards. On the other hand many novelties, the origin of which had not been given, led back with certainty or probability to an intentional or unintentional cross. Already hybridisation possesses a much greater importance for the formation of new groups from the possibility of a production of new Mendelian combinations of characteristics and component characteristics. A striking feature in the significance of hybridisation showed itself in the occasional unexpected evolution of wholly new forms by crossing.

After other papers, the Conference adjourned until next day, to enable the delegates to visit the residence of Sir Trevor Lawrence, at Burford, whence they were conveyed by special train. After luncheon, which was provided in a marquee on the lawn, the visitors wandered about the delightful garden, the fine Orchid collection forming one of the special features of interest.

On Thursday morning the proceedings were opened with a paper on "The Germination of Orchids," by M. Noel Bernard, of the University, Caen, France, his paper being illustrated by a series of interesting exhibits. The lecturer said that on the roots of Orchids, whether wild or cultivated, were found fungi, which, living inside the cells of the outer surface, formed lumps like balls of thread. This fact was well known, easy to observe, and furnished one of the best examples of those associations, very common in Nature, between plants and micro-organisms. He had attempted to estimate the extent of this connection, and the degree of dependence the Orchid and its fungus might have to each other. This experiment showed him that the fungi of Orchids could live apart from the roots in which they generally lodged. If a small fragment were cut from a contaminated root

and sown in a sterilised tube, on a suitable nourishing medium, the spores developed freely. They could be transplanted from tube to tube without losing their power to grow. He had pure cultures of spores living after four years, without their having been replaced on the Orchids. He had found three species of these Orchid fungi, but he had not yet named them. Although the fungi could live away from their host-plants, the Orchids themselves required the presence of their guests for their own development. He had sown the seeds of numerous Orchids aseptically, with every precaution, but the grains had not germinated freely, and their growth was insignificant. On the other hand, if spores of the appropiate fungus were sown with the Orchid seeds, they commenced to germinate almost immediately in a very regular manner. With the fungi which he possessed he had obtained not only the germination of Cattleya and of Cypripedium, but also the germination of species of Odontoglossum, Phalænopsis and Vanda, which were regarded by practical men as more difficult. In Nature, or in the glasshouse, the same thing took place as in the culture tubes. He had examined a large number of young Orchids which had germinated in very varying conditions, and he had always noticed that they were invaded by the fungus from the beginning of their life. The Orchids were therefore practically dependent upon their parasitic fungi, since they did not grow without them. One of the greatest difficulties was to procure the fungus suitable for each kind of Orchid. As a rule he used the fungus collected from the roots of an Orchid of the same species, or of one nearly allied to that which bore the seeds. That was the best rule he could give, but it might not be an absolutely sure one. Making all reserve necessary in a subject so complex, he believed it was possible that the mere change of the fungus might result in a variation of the species of Orchid in question. The extension of the researches would possibly one day indicate to practical experimenters new ways in the rational methods of culture of a large number of plants, as Orchids were not by any means the only plants which lived in association with fungi.

Various other papers followed, including one on "The application of Mendel's Laws to the Improvement of Cultivated Plants," by Mr. R. H. Biffen, of Cambridge, in which the lecturer expressed the opinion that by the application of Mendel's principles the desired results could be attained. The subjects he had worked with were chiefly cereals.

The afternoon session was the final one of the Conference, and was devoted to several papers of practical importance, not, however, including any Orchid subject. But there were several references to Mendel's "Laws." Mr. A. Worsley, of Isleworth, for example, pointed out the absence of Dominance in the cases he had investigated among the Amaryllideæ, in reply to which the chairman pointed out that Dominance

was not essential to Mendelian results. Mr. James Douglas, Great Bookham, remarked that the Carnation had been developed from the wild stock, Dianthus caryophyllus, by careful selection, apparently without hybridisation, though it might be hybridised by any species of Dianthus. He added that he understood little of Mendel's Laws, but he knew what he wanted, and generally got it. The question of Mutation was also mentioned, and the Chairman exhibited a specimen of Dipsacus from Dr. Masters' garden. It was from seeds of the twisted variety, which was found by Prof. de Vries to reproduce itself to the extent of 80 or 90 per cent, but Dr. Masters had grown the plants from this same stock for years without ever seeing a twist in the stem, except once, as the result of frequent mutilation, but even this had not been reproduced in seedlings from it.

In the evening the delegates were entertained at a banquet held in the Society's Large Hall, under the presidency of Sir Trevor Lawrence. After the loyal toasts, Veitch Memorial Medals were presented to Mr. William Bateson, F.R.S., President of the Conference, to Prof. Johannsen, for his discovery of the effect of ether in advancing the inflorescence of flowers, to Prof. Wittmack, for many years' devotion to systematic and practical botany, and to M. Maurice de Vilmorin, a member of a firm which had done so much for horticulture. Gold Banksian Medals were also awarded to Miss Saunders, lecturer on Botany at Newnham College, Cambridge, for her studies on Inheritance in Plants, and to Mr. B. H. Biffen, of Cambridge, for his researches and discoveries in connection with Heredity in Cereals. Various toasts and speeches followed, during which the opinion was expressed that the Conference had been a great success, and Mr. Bateson claimed that a knowledge of the Laws of Heredity would give man a power over his future which no other science had yet endowed him with. M. Philippe Vilmorin, on behalf of the Horticultural and Botanical Societies of France, invited the R.H.S. to pay a visit to Paris, and hold a Hybridisation Conference there.

On Friday the delegates visited the Natural History Museum, South Kensington, and then proceeded in carriages to Gunnersbury, to visit the beautiful gardens of Mr. Leopold de Rothschild, where they were entertained at luncheon, and spent some time in examining the numerous objects of interest, including a nice collection of Orchids. Finally they went on to the Royal Botanic Gardens, Kew, where they visited the Orchid and several other houses in the somewhat limited time remaining, and were invited to tea by the Director, Colonel Prain.

The weather was delightfully fine throughout, with the exception of a sharp thunderstorm while the banquet was proceeding, and everyone expressed themselves as delighted with the visit. The Report of the Conference will be awaited with interest.

ODONTOGLOSSUM × EURYDICE.

MESSRS. CHARLESWORTH AND CO. have now sent us a photograph of their striking hybrid Odontoglossum × Eurydice, which received an Award of Merit at the Holland Park Show, as recorded at page 245, and we have pleasure in reproducing it. The hybrid was derived from O. cirrhosum ♀

Fig. 36. ODONTOGLOSSUM × EURYDICE.

and O. hastilabium ♂, thus linking up two distinct sections of the genus, and the figure shows a preponderating influence on the part of the pollen parent in the shape and markings of the flower, though with considerable modification in detail. The ground colour of the flower may be described

as cream white, and the blotches as deep red-brown, with some yellow on the crest of the lip. O. hastilabium, as is well known, is a rather tall robust plant, and, as both parents bear numerous flowers on the inflorescence, the hybrid should develop into an imposing thing when the plant becomes strong.

CALENDAR OF OPERATIONS FOR SEPTEMBER.

By J. M. BLACK, Streatham.

ODONTOGLOSSUMS.—The big job this month will be the repotting of O. crispum, and other cool-house Odontoglossums, which have the new growths well started, and which are evidently in want of a change. Plants that were repotted in the beginning of the year should not require disturbing, nor yet should a great many of those which were last repotted in the autumn of 1905. Any plants that were put into very small pots in the spring, and seem to be in want of a larger pot, can be transferred without much root disturbance, by potting the ball intact, but plants that are really in want of repotting because the material has become exhausted should have all the old compost shaken clean away from the roots. It is well known that repotting shakes the constitution of a plant for a time, but it is a good maxim to do the job thoroughly or leave it alone. In repotting healthy plants there will always be found a lot of healthy roots, whether the compost be exhausted or not, but one must not be led away by this and induced to repot the ball into a bigger pot, excepting where the ball is a very small one and in sweet, good condition. Plants which I have repotted from time to time without shaking the old material away, have rarely been satisfactory, having at the next repotting no roots in the old ball at all, being all outside it and round the sides of the pot in the fresh material. This repotting of the ball in its entirety should be indulged in very sparingly, and might be confined altogether to small plants; if large plants are treated in this way, one gets out of all reasonable bounds with the size of the pot—although this is a minor matter compared to the danger of having a large lump of stagnating material buried in its centre.

We keep on using the expressions "worn out" and "exhausted" when speaking of the material that has been in a pot for some time, but these expressions, although comprehensive enough, are hardly correct. When a material decays it need not on that account be nutritively exhausted, for, as a matter of fact, decay is a first essential to assimilation by the plant; but, although little plant food may have been actually extracted from the compost since it was first used, the plant becomes tired of it eventually. It is the mechanical properties of the potting mixture collapsing under decay which necessitates most potting of Orchids, which is quite a different thing from food exhaustion.

In potting, use fern rhizomes for drainage, well up the pot, and pot in a mixture of good fibrous peat, broken into lumps, and brown sphagnum moss, to which a good sprinkling of sand and leaves has been added. An all-moss surfacing seems to be gaining favour, and it is in every way satisfactory. i have started mixing a good quantity of sand with all the moss we use for this purpose, and if the double-headed Welsh moss is used, it makes a neat finish, and is quite pervious to air and water. It should be worked in tightly. But I have still a leaning towards the alternate peat and moss finish, which always answers well.

Those Odontoglossums which are not repotted should have the moss clipped back, or re-surfaced where necessary, and have their pots scrubbed, and the whole house cleaned and re-arranged for the winter. The Odontoglossum house usually begins to look a bit ragged by the end of summer, but the cool autumn and the advancing growths will soon change its aspect.

O. crispum is one of the cleanest plants that the Orchid grower has to deal with, for, with the exception of slugs—which, by the way, should be expected to re-appear soon with the cooler weather—it is rarely, if ever, attacked by anything in the way of insect pests, except an occasional thrip. Some of the other Odontoglossums, however, have not such a clean sheet, O. maculatum, O. cordatum, and a few others being frequently attacked by scale, and it will be as well to examine carefully all plants in detail now that the house will be gone through systematically. Much less watering will now be required by Odontoglossums, even although growing, because there will be much less evaporated, owing to the shortening days, and the September night air being heavily charged with moisture. This does not mean that the plants should not be kept as wet as during the summer, but that one watering will last longer. Plants that have been newly potted should be syringed in between the pots, and also sparingly overhead, but do not on any account shut the house up tight, with the intention of re-establishing them quickly. Odontoglossums resent stagnation at all times, but at no time more than when they have just been repotted. Give air with caution and reason, but give it, both top and bottom. A little warmth in the pipes may now be again required in this house, even in the day time, particularly if we have a spell of cold, rainy weather. This house should feel cool and buoyant, not cool and clammy. I think there is a difference.

MASDEVALLIAS.—The present month will be a suitable season to repot those Masdevallias which were not repotted early in the year. The compost recommended for Odontoglossums will be suitable, and the foregoing directions will be also applicable. With the exception of M. tovarensis, which likes a little more warmth, Masdevallias are grown with, or under

similar conditions to Odontoglossum crispum, but are much more liable to be attacked by thrips, so that they must be kept well under observation. There is always in a house one end warmer than the other, and this should be the position selected in the Odontoglossum house for Masdevallias: it need not be the lighter side.

There will be a few late-flowering species of Cattleya and Lælia which may require potting this month, and others will be flowering or coming into flower, but how to treat them has been dealt with at considerable length in previous Calendars. In collections which have many representatives of the different genera in cultivation—and I am afraid that we can make little pretentions in this respect at Chessington—there will be a good many different things which will require repotting before the winter sets in.

SEASONABLE REMARKS.—Before the end of the month shading will be little more required, and it should be dispensed with on all the houses as soon as ever it is possible, with safety. September and October are two months in which an inexperienced man is apt to make many mistakes. Lengthy details might be summarised into the word—*moderation*. Moderation in damping, watering, airing, shading, firing. All these things are necessary, but in moderation. Let things go on steadily, and be satisfied with the progress made. Many bulbs which have a finished look are yet green and succulent, and will fill out astonishingly, but do not try to hurry them. Do not try to economise fuel by keeping the ventilators unduly close, but let all the houses have air while there is still light, and the plants will go through the winter well. Too much damping is fatal, and do not be seduced into syringing heavily overhead at three o'clock because the sun is strong. You may find the water on the foliage next morning. The syringe is now becoming a dangerous instrument. Shutting up the houses in the afternoon should now be discontinued.

TEMPERATURES.— The day temperatures will still be largely a question controlled by outside conditions, and the night temperatures should read something like the following :—

EAST INDIAN HOUSE, 70°.	CATTLEYA HOUSE, 65°.
INTERMEDIATE HOUSE, 60°.	ODONTOGLOSSUM HOUSE, 55°.

These temperatures should be maintained, with a fair amount of air on the houses, having, during favourable weather—with the exception of the East Indian House—both the top and bottom ventilators a little bit open. During sunless weather the temperatures should rise at least 5° more in the daytime, and on warm nights the above temperatures may be exceeded a little.

OVERCROWDING IN THE ORCHID HOUSES.—An evil which it would be difficult to overestimate is overcrowding plants in the Orchid houses. Some Orchids will stand anything, but the majority resent overcrowding.

Imported Odontoglossums do better, I believe, to have the pots standing close together, thus holding the moisture better than when standing wide apart, but as they become leaved they like plenty of room. Overcrowding Cattleyas is most unnatural treatment, for these plants like the air to have unrestricted play all round them. To have the plants huddled together is a most undesirable state of affairs from every point of view, and it is most difficult for the Orchid grower to give each plant that individual care which is necessary to do it full justice when it is smothered in the foliage of the other plants. This difficulty is most acute when the active season is over, and when careful watering is more than ever needed. And the houses do not have a trim, well-cared-for appearance with plants standing pot-thick. There are two obvious remedies.

GROWING ORCHIDS UNDER OR ADJACENT TO TREES.—There is to my mind no greater abomination than having trees overhanging or near the Orchid houses. No one who has not had the experience can appreciate the disabilities under which the Orchid grower labours when so situated. The evils are many, pernicious, and durable, and sometimes unexpected. One summer a brood of small caterpillars found their way into a tiny batch of Odontoglossum seedlings and fell to with that appetite which only caterpillars have. These were the first few Odontoglossums we had ever raised, and it was to be expected that they should be sought out in preference to anything else. Insects have an unerring instinct for finding out what is most prized. A tall tree standing a short distance away from a house will keep the sun off it for hours, and two or three conveniently placed will suffice to shade it all day. There is a constant fall of debris from trees, and we all know the filthy, blighty condition of most trees after a few weeks of dry weather in the summer. If hanging over the houses the first shower of rain washes this into the rain water tanks, and the resultant decomposition turns the water malodorous, and makes it seethe with insect life. Tanks that are cleaned out and scrubbed every autumn smell bad again before the year is round. I am not prepared to say that this water is injurious to the plants, for, after having been obliged to use it for some time, no evil effects appear to have taken place, but it is risky, and, to say the least, unpleasant. The present is a good time to have tanks emptied and scrubbed, for we can rely on having them refilled soon, and what may be required in the meantime can be carried from another house. Gratings placed over the pipes which convey the water into the tanks will keep out the leaves, but not the small particles.

In conclusion, my advice to anyone contemplating building an Orchid house is to avoid trees like poison, and also all shade from high buildings, &c. There is nothing like houses standing clear and free to give satisfaction, and save rueful heart-burnings to come.

ORCHIDS AT BURFORD.

A VISIT to Burford at any season would repay a lover of Orchids, for these beautiful plants have a way of producing a succession of flowers throughout the year, wherever a representative collection is grown—not even the month of August forming an exception—and when the delegates to the recent Hybridisation Conference paid Sir Trevor Lawrence a visit, at his kind invitation, on the afternoon of August 1st they found a large number of interesting things in bloom, and many were the visitors who made a leisurely tour round the numerous houses. There was no attempt to make a "show,"—but we believe there is no Show House at Burford—the plants had to be visited, each in its own appropriate situation, where we always think they are the most attractive, and in any case the Orchidist likes to see where they are "grown." In almost every corner there was something to attract attention, and a few notes on the principal things seen in flower will doubtless be interesting. Our notes follow no particular order; the plants are mentioned just as we found them. We just wandered at large, and may have begun at the end or in the middle for all we know, and though not our first visit it had the charm of novelty in this respect. And we should like to take this opportunity of thanking Sir Trevor on behalf of the Orchidists of the party—which was nearly everybody for the time being—for a thoroughly enjoyable afternoon.

The first house we entered contained the two fine hybrid Vandas known as Miss Joaquim and Marguerite Maron, the former with a spike of nine flowers, and the latter with as many as fifteen—the spike having two side branches—and we paused for a short study in Mendelian "Dominance," and remarked that it would be interesting if Mr. White could show us what the "F. 1" generation would be like. Passing Dendrobium rhodostoma and what we took to be D. Williamsoni, in flower, we entered another house, to find a beautiful example of the rare and striking Bulbophyllum Ericssoni bearing an umbel of eight blooms, radiating like the spokes of a wheel, with the eight dorsal sepals piled up in a pyramid in the centre—a truly remarkable plant, which, by the way, is depicted in the current issue of the *Botanical Magazine* (t. 8088). Here the Cattleya group was well represented, with good examples of C. Harrisoniana, C. × H. G. Selfridge (superba × Aclandiæ), C. × Atalanta, one having a spike of seven fine flowers, C. × Iris, C. × Claudian, and Lælio-cattleya purpurato-Schilleriana, with a nice batch of Cypripedium niveum and C. concolor.

Passing on to another house we found numerous interesting things in flower, those noted including the brilliant Renanthera Imschootiana, the rare Grobya Amherstiæ, Dendrobium nutans, Cochlioda rosea, Gomesa scandens, Aspasia lunata, Trichopilia laxa, Maxillaria Hubschii and M.

fucata, Theodorea gomezoides, Oncidium virgulatum, and the curious Pleurothallis strupifolia. Adjacent houses contained plants of the handsome Barkeria spectabilis, Cypripedium Dayanum, Phalænopsis violacea, the tiny Maxillaria nana, Polystachya odorata, fine examples of Dendrobium Jerdonianum and D. atroviolaceum, the very rare and striking Bulbophyllum longisepalum, and another species with a long spike and feathery lip; while in succeeding houses we noted the graceful Coelogyne Dayana, the bright rose-purple Dendrobium glomeratum, Epiphronitis Veitchii, some beautiful examples of Platyclinis filiformis, Lælia longipes, Gongora galeata, Epidendrums ochraceum, pterocarpum, fragrans, and umbellatum, Oncidium Boothianum, Vanda Denisoniana, &c.

In the Odontoglossum house we found a beautiful example of Dendrobium Victoria-Regina hanging from the roof, and flowering freely, and as we know that the plant has been here for a long time it is clear that this is the proper situation for it. Its peculiar violet-blue flowers are unique, so far as the cultivated species are concerned. The Odontoglossums were looking well, and there were examples of O. crispum, O. Wallisii, and O. Sanderianum in flower, with some good Epidendrum vitellinum, Disa × kewensis, Oncidium curtum, O. Forbesii, and various others.

A house containing numerous Catasetums was interesting, and we noted the handsome C. Bungerothii in bloom, while near by was a beautiful example of Arachnanthe Lowii, but we believe that the united efforts of the whole Conference was unequal to the task of explaining the significance of its two kind of flowers. It is not a sexual difference, as in Catasetum, nor are the basal flowers abortive, as in Grammatophyllum. Both kinds seem equally perfect, so far as structure is concerned, though so different in shape and colour. And it is as beautiful as it is remarkable. Another remarkable Orchid was suspended close by, namely Bulbophyllum barbigerum, and it, too, attracted much attention, for the feathery lips were continually swaying up and down in a gentle breeze from the ventilators. Other things were in flower, but we must pass on.

We had no intention of missing the Masdevallias, which are always interesting, but first we noted examples of the handsome Oncidium macranthum and the curious O. dasytyle, whose thick crest is commemorated in its name; also Odontoglossums tripudians, Hunnewellianum, Lindleyanum, Harryanum, maculatum, Pescatorei, × excellens and × aspersum. Various brilliantly-coloured Masdevallias were in bloom, including a yellow-form of M. Harryana, also the true M. melanoxantha, the rare M. velifera, M. hieroglyphica, M. calura, and others, with the hybrids M. × Hincksiana, × Rushtoni, × Acis, × Stella, × Ajax, × Bocking Hybrid, × Hebe, and others. There were also Promenæa xanthina and

P. stapelioides, Pleurothallis Smithiana, P. stenosepala, Physosiphon Loddigesii, and various other interesting things.

Time failed us to note everything in flower—whether we missed any house altogether we are uncertain, but we know that some members did so—and we will conclude with a note on the unflowered hybrid seedlings, which have been left for a paragraph all to themselves.

Hybridisation has been carried on at Burford for a long time, and with considerable success, and in two of the houses we found large numbers of seedlings in almost every stage, some still on the seed pot, but the majority established in their own receptacles, of which a large number were in lilliputian thimble pots, which always amuse those who have not much experience of Orchid raising, while their occupants are viewed with the greatest curiosity and interest. And they were thriving wonderfully, just as baby Orchids should do, and generally do, where their wants are properly attended to. An experienced member of the party quickly produced a lens and pointed out numbers of tiny green globes, which were potential Orchids, though at present they looked more like examples of the rootless duckweed, Wulfia arrhiza, which had somehow got stranded. We did not find any of M. Bernard's symbiotic fungi, but doubtless they were there in countless thousands, though not imprisoned in the famous tubes. But where was the curious "F.1" generation? Is it not yet found among Orchids? One sharp-eyed individual discovered a small seed-pan, bearing a label with the brief inscription, "Rolfe," and containing a number of young plants with two or three leaves each. What did this portend? It was explained these were seedlings from Epidendrum × kewense (evectum × xanthinum), self-fertilised, with the view of testing the re-appearance or otherwise of the original specific characters in the first generation, or "F.1" of Mendelian nomenclature. The result has already been predicted. Let us wait and see how it works out. At all events we have made a start among Orchids, which would seem to be peculiarly well-fitted for experiments of this kind, because of the ease with which the pollen can be manipulated, and the comparative absence of risk of the results being vitiated by stray pollen from an unknown source. The chief drawback is the amount of time required for the seedlings to reach the flowering stage. But Orchidists who are interested in testing the Mendelian theory of heredity should try to self-fertilise a few primary hybrids of known origin, and note the result.

But we are digressing, and must return to Burford, just to say how much we enjoyed the ramble among Sir Trevor's pets, whose diverse and multitudinous wants must keep Mr. White and his assistants pretty busy at times, for the collection is large, very rich, and in excellent condition generally.

SARCOCHILUS UNGUICULATUS.

THE annexed figure represents a plant of the curious Sarcochilus unguiculatus, and is reproduced from a photograph sent by Mr. M. J. Pope, Naugatuck, Conn., U.S.A. It was obtained under the name of Sarcochilus calceolus, but Mr. Pope writes:—"I think it must be S. unguiculatus, as the description given in *Orchid Review*, vol. ii. p. 231, seems to suit it

Fig. 37. SARCOCHILUS UNGUICULATUS.

admirably, except that the eight plants here open earlier in the morning—soon after daybreak—and close between 9 and 10 o'clock. On dark days they sometimes stay open until 12 or 1 o'clock. Five flowers is the most I have had on one spike; there are usually but three or four. It is rather strange that all the flowers open at the same time, and all the plants

manage to be in bloom on the same day, though it takes from two to three weeks until a new crop of flowers is matured. The whole house is filled with their sweet perfume when these plants are in bloom, there being sometimes as many as fifty or more flowers open together." It is unfortunate that its beauty is so fleeting, for the photograph shows it to be a charming little plant, when the flowers are expanded. It reminds one of a small species of Phalænopsis, and in fact it was once described as a Phalænopsis with a new type of labellum, under the name of Phalænopsis fugax. The history of the species has already been given, as above cited, and it may be added that it has been lately re-introduced among importations from the Philippines, where only it is found, so far as our knowledge extends. The peduncles keep on lengthening and producing a new crop of flowers at intervals, and perhaps Mr. Pope will some day tell us how long it is before they are ultimately exhausted, and what length they attain. A considerable number of species have this same fleeting character.

EPIDENDRUM ATRORUBENS.

THIS very attractive Mexican species was described in 1896, from materials supplied by Messrs. Linden, Brussels, in October, 1892 (Rolfe in *Kew Bull.* 1896, p. 46; *Orch. Rev.* iv. p. 102), and has since flowered in two or three other collections. It is interesting to record that its history can now be carried back twenty years further, for in November, 1876, the same plant flowered in the collection of John Day, Esq., of Tottenham, when it was thought to be E. diotum, Lindl., an allied but quite distinct species. Mr. Day's painting (*Orch. Draw.* xx. t. 35) exactly agrees with the later examples, but the native country then appears to have been unknown. Mr. Day remarks:—"Bought in flower at Stevens', November 4th. 1876, at a sale of Backhouse's plants. Bulbs round, 2 x 2 in., slightly tapering to apex, clothed with whitey brown scales, dark purple in age. Leaves coriaceous, single, 8 inches long. Scape 4 feet, with two or three short distant branches." There is another species of this affinity, described by Reichenbach, in 1877 (*Linnæa*, xli. p. 80). It came from Mr. Day, but is not recorded among the latter's drawings. It is said to be allied to E. plicatum, Lindl., and to have dark olive brown sepals and petals, and yellow lip veined with dark purple. This does not, by any stretch of imagination, describe Mr. Day's drawing above mentioned, nor yet the plants which have since appeared, these having dark reddish purple sepals and petals, and a rather lighter purple lip, so that what E. insidiosum Rchb. f., really is must remain doubtful for the present.

R. A. R.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of this Society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on August 14th, when there was a fine display of Orchids for the season, and the awards consisted of five Medals, two Cultural Commendations, one Award of Merit, and one Botanical Certificate.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), sent a very interesting little group, to which a Silver Banksian Medal was awarded. It contained some good forms of Cattleya Warscewiczii, Cœlogyne Massangeana, Lælio-cattleya Remula, the rare Brassia Kalliana, Cypripedium × Wottoni and various other hybrids, Sophronitis pulvinare, Pleurothallis scapha, Masdevallia Carderi, Sarcolabium ampullaceum, and various other species.

E. Roberts, Esq., Park Lodge, Eltham (gr. Mr. Carr), received an Award of Merit for Cypripedium × Harri-Leeanum Park Lodge var. (Harrisianum superbum × Leeanum), a handsome form, having a large rose-coloured dorsal sepal, with a white margin and numerous dark purple feathered lines, while the petals and lip were broad and heavily suffused with reddish purple.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent a very pretty group of rarities, including two well-bloomed specimens of Odontoglossum aspidorhinum, Dendrobium glomeratum, the rare Oncidium panduratum, Catasetum fimbriatum and its variety platyptorum, Cycnoches maculatum, and C. Egertonianum viride, the latter receiving a Botanical Certificate. A Cultural Commendation was given to a fine specimen of Platyclinis filiformis, bearing about one hundred of its graceful spikes of greenish yellow flowers.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), received a Cultural Commendation for a noble example of Odontoglossum × crispo-Harryanum. The two inflorescences from a single bulb were 5½ feet long, one bearing 24 flowers, the other with eleven branches and 49 flowers, a remarkable example of good culture.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), sent fine forms of Lælio-cattleya Nysa, L.-c. bletchleyensis, L.-c. Phryne, L.-c. Atalanta and L.-c. elegans Schrœderiana.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), sent two good forms of Lælio-cattleya elegans, the handsome Cattleya × Wavriniana Fowler's var., bearing a strong spike of six flowers, Cypripedium × Penelope (Morganiæ × superbiens), and the richly coloured C. × bingleyense var Æneas.

F. Ducane Godman, Esq., Horsham (gr. Mr. Moody), sent a specimen of the pretty South African Satyrium carneum.

M. Jules Hye de Crom, Ghent, sent a small plant of Miltonia × Hyeana (M. × Bleuana × M. vexillaria Leopoldi), a pretty white flower with a trace of rose in the centre, and a yellow marking at the base of the lip.

C. J. Lucas, Esq., Warnham Court, Horsham (grower Mr. Duncan), sent Lælio-cattleya Lucasi (Lælia × Iona × C. Warscewiczii), a pretty dwarf form, L.-c. Geoffrey (L. longipes Lucasiana × C. Warscewiczii), much resembling a small L. Jongheana, with pale lilac sepals and petals, and the lip whitish, with the margin and apex purple and the throat yellow. He also sent several hybrid Cypripediums.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a very fine group, to which a Silver Flora Medal was awarded. It contained several very beautiful forms of Odontoglossum × Rolfeæ, of which Messrs. Charlesworth have raised a fine series, spotted forms of O. crispum, a fine example of Miltonia Schrœderiana, Oncidium macranthum nanum, which is said never to produce a trailing spike, some good Lælio-cattleya callistoglossa, L.-c. Berthe Fournier, L.-c. Issy, several good Ancistrochilus Thomsonianus var. Gentilii, Cattleya × calummata nobilior, C. Gaskelliana alba, C. × Lord Rothschild, and various good hybrid Cypripedes.

Messrs. Sander and Sons, St. Albans, also received a Silver Flora Medal for a brilliant group, containing a remarkable series of Lælio-cattleya bletchleyensis, showing great variation in colour, some good Cattleya Warscewiczii, C. × Lord Rothschild, Odontoglossum ramosissimum, O. bictoniense album, Dendrobium Phalænopsis, Brassocatlælia Mackayi, Nanodes Medusæ, Theodora gomezoides, and other interesting things.

Messrs. Hugh Low and Co., Enfield, received a Silver Banksian Medal for a bright and pretty group, containing some good Cattleya Gaskelliana, C. Grossii, C. granulosa, the bright yellow Mormodes pardinum var. unicolor, Catasetum macrocarpum, Dendrobium Dearei, the brilliant Epidendrum pristes, Oncidium carthaginense, &c.

Messrs. Stanley and Co., Southgate, also received a Silver Banksian Medal for a good group, containing several examples of Oncidium varicosum, Lælia crispa, and Cypripedium × A. de Lairesse, with Cattleya Harrisoniana, Odontoglossum Hunnewellianum, O. crispum, O. Harryanum, Dendrobium Phalænopsis, Lælio-cattleya elegans, and various others.

Diploma Awards.

The subjects of the special competition on this date were Lælio-cattleya elegans and Cattleya Warscewiczii, with their hybrids, and the following were the awards :—

LÆLIO-CATTLEYA ELEGANS AND ITS HYBRIDS.—First Diploma to L.-c. Berthe Fournier, from Messrs. Charlesworth and Co., 2nd Diploma to L.-c. elegans Turneri, from J. Gurney Fowler, Esq.

CATTLEYA WARSCEWICZII AND ITS HYBRIDS:—First Diploma to L.-c. × Nysa gloriosa; 2nd Diploma to L.-c. bletchleyensis, both from Jeremiah Colman, Esq.

AT the meeting held on August 28th there was a very fine display of Orchids for the holiday season, and the awards consisted of six medals, one First-class Certificate, four Awards of Merit, and one Cultural Commendation.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), staged a fine group, which received a Silver Flora Medal. It contained numerous good examples of Lælio-cattleya Nysa (L. crispa × C. Warscewiczii), raised at Gatton Park, L.-c. Phryne, L.-c. bletchleyensis, Brassolælia fladosa (B. nodosa grandiflora × L. flava), a pretty little hybrid which is described on page 286, the handsome Cattleya × Mrs. J. W. Whiteley Gatton Park var., C. Harrisoniana, C. × Parthenia, C. × Browniæ, C. Warscewiczii, the rare rose-coloured Cœlia macrostachya, Sobralia xantholeuca, Dendrobium aureum, D. × rhodostoma, Cœlogyne speciosa, the rare Oncidium zebrinum, Spathoglottis × Colmanii fulvissima, Cypripedium Charlesworthii and other good things.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), received a Silver Banksian Medal for a very interesting little group, containing a plant of the remarkable Listrostachys caudata, bearing a six-flowered inflorescence, five good plants of the handsome Dossinia marmorata, Rhynchostylis retusa, Miltonia vexillaria rubella, Lælio-cattleya elegans and its variety Turneri, L.-c. Proserpine, Disa grandiflora, Cypripedium × Helen (Dayanum × Charlesworthii), C. × Unixia superba, Cattleya Loddigesii, C. Warscewiczii, and Masdevallia Chimæra.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), sent a well-flowered plant of the brilliant little Sophrocattleya Chamberlainii var. triumphans, Lælio-cattleya Berthe Fournier var. Mrs. Benson, a richly coloured form, and Cattleya × Iris var. Countess of Morley, the latter, a very handsome form, gaining a First-class Certificate. This had dark apricot sepals and petals, and the lip yellowish tinged with rose-pink.

H. Little, Esq., Baronshalt, E. Twickenham (gr. Mr. Howard), received an Award of Merit for Sobralia Lowii, having bright rose-purple flowers, with a slight trace of yellow in the throat.

P. L. Hudson, Esq., Pampisford, Cambridgeshire, sent a fine plant of Cypripedium Charlesworthii, with fifteen flowers, to which a Cultural Commendation was given.

Col. H. Carey Batten, Abbot's Leigh, Bristol, sent the interesting green and white Lycaste leucantha.

E. Roberts, Esq., Park Lodge, Eltham (gr. Mr. Carr), showed Cypripedium × Olga Bradshaw (callosum × œnanthum superbum), a fine thing, most like the latter in colour but much larger.

The Hon. Walter Rothschild, M.P., Tring Park (gr. Mr. Dye), sent the handsome Cattleya × Hardyana Tring Park var. and Brassocattleya × Madame Chas. Maron.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), showed a beautiful example of Odontoglossum crispum xanthotes Charlesworthii.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Cattleya × vestalis Westfield var. (maxima × Dowiana aurea), a beautiful light coloured form, and C. bicolor Westfield var., having yellowish green sepals and petals, and a rosy crimson lip with a white margin in front.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a very fine group, to which a silver-gilt Flora Medal was awarded. It contained about a dozen beautiful examples of Cattleya × Iris, varying greatly in colour, the handsome C. × Chamberlainiana, C. × Fabia, C. Gaskelliana alba, Brassocattleya gigas-Digbyana, B.-c. Queen Alexandra, Lælio-cattleya Haroldiana, L.-c. Mandarin, L.-c. Alcyone (L. flava × C. Schilleriana), a pretty bright yellow flower with some crimson markings on the lip, Miltonia-Hyeana (M. × Bleuana × M. vexillaria Leopoldi), Brassia Lawrenceana longissima, Odontoglossum × Othello and others, Masdevallia × Pourbaixii, Oncidium trulliferum, O. ornithorrhynchum album, Aërides japonicum, Epidendrum radiatum, the remarkable Cycnoches Egertonianum viride, and other interesting things.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a rich group, in the centre of which was a beautiful series of fourteen racemes of Arachnanthe Lowii, these being tied to slender sticks, so as to hang down very gracefully in their natural position, and each having one or two of the very different yellow flowers at the base, formed a very attractive feature. Other interesting things were Cycnoches chlorochilon, Warscewiczella Wailesiana, Cypripedium × Hitchinsiæ, Lælio-cattleya bletchleyensis magnifica, L.-c. Mrs. Robert Measures (L.-c. elegans × L. xanthina), having yellow flowers, with the front lobe of the lip bright purple and the side lobes white, L.-c. Henry Greenwood The King, a very fine form, and others. Awards of Merit were given to L.-c. elegans His Majesty, a very richly coloured form, bearing two large spikes of twelve and nine flowers, and to Cypripedium × Baron Schröder var. ardens, having very broad dark veining on the dorsal sepal.

Messrs. Stanley & Co., Southgate, received a Silver Banksian Medal for a very interesting group, containing some good examples of Lælio-cattleya

elegans, and Cattleya Loddigesii, with C. bicolor, Lælio-cattleya Adolphus, Odontoglossum Harryanum, O. grande, O. Hunnewellianum, O. Pescatorei Dendrobium Phalænopsis, D. formosum, Cypripedium × A. de Lairesse, Oncidium curtum, and O. incurvum album. An Award of Merit was given to Oncidium × Stanleyi, a very handsome supposed natural hybrid between O. curtum and O. Marshallianum, which is described on page 186.

Messrs. Hugh Low & Co., Enfield, also received a Silver Banksian Medal for another interesting and varied group, including some good Dendrobium Phalænopsis, D. sanguinolentum, a fine Catasetum macrocarpum with two very strong spikes, Stanhopea oculata, S. Wardii, Cattleya Warscewiczii, C. Lueddemanniana, C. Gaskelliana alba, C. Leopoldi, C. Grossii, the rare Oncidium microchilum, O. oblongatum, O. carthaginense, O. Forbesii, Phalænopsis violacea Low's var., Gongora nigrita, Lycaste leucantha, the rare Warscewiczella velata, Cypripedium × Transvaal, &c.

ORCHIDS AT KEW.

A CONSIDERABLE number of interesting Orchids are now flowering in the Kew collection, and one, especially, which always attracts a good deal of attention when in flower, is the Dove Orchid, Peristeria elata, which is now at its best, having four large spikes with ten to twelve flowers each. Several Catasetums are in bloom, including C. macrocarpum, C. Russellianum, and C. × splendens, the latter being a supposed natural hybrid between C. macrocarpum × C. Bungerothii. Several others are showing well for flower, but the spikes are not yet fully developed.

A good plant of Spathoglottis plicata var. Micholitzii, with seven spikes of flower, is rather conspicuous, the scapes being dwarf and the flowers of a very rich purple. Close by is Cynorchis purpurascens, a native of the Mascarene Islands, and by no means common in cultivation. It has quite a distinct appearance, its huge leaves measuring nearly two feet in length, and from seven to eight inches broad, and the flowers, which are rosy pink, with a white blotch on the lip, are produced in large heads on rather short scapes. Several plants of Polystachya leonensis are in bloom, and the scapes are not unlike Lily-of-the-valley in shape, though greenish in colour. Eria fragrans is well named, on account of its sweet scent, while contrasting strongly, both in habit and flowers, are Eria vestita and E. velutina, which have a trailing habit, and their stems and leaves are covered with rich brown hairs.

Two little species of Epidendrum, E. cochleatum and E. Ruckeræ, are among the rarities in the botanical corner, together with Sophrocattleya eximia, Bulbophyllum densiflorum, B. apodum, and B. papillosum, while suspended above in small baskets are Trias disciflora, T. grandiflora, and

the tiny Oncidium cornigerum. Stanhopea eburnea, S. oculata, and S. Wardii are thrusting their flower spikes through the sides and bottoms of the baskets, and it may be added that this genus has made a good display for some time. The Brazilian Miltonias are also making a good display with their bright and attractive flowers, the most conspicuous among them being a well-flowered plant of M. × Cogniauxiæ var. bicolor. Others include M. candida, M. Clowesii, M. × castanea, &c., intermixed with several Lælio-cattleyas, as for instance L.-c. elegans, which is represented by several large pans with numerous spikes in full flower, L.-c. Schilleriana, L.-c. Mandarin, L.-c. Amelia, and L.-c. massiliensis. Cattleya is also well represented by C. Leopoldi, C. bicolor, C. Grossii, C. granulosa, C. × sororia, C. velutina, and the pure white C. Gaskelliana alba. One or two Oncidiums are conspicuous by their bright yellow flowers, as O. varicosum var. Rogersii and O. Geertianum, while the pretty little O. dasytyle is much paler with a big blackish crest. Near by is the brilliant orange-coloured Epidendrum vitellinum, forming a strong contrast.

Foremost among the Vandas is a good plant of Vanda Sanderiana, bearing two spikes of seven and eight flowers each. A basket of V. Kimballiana is making a good show of flower, while suspended from the roof is a plant of the remarkable Listrostachys caudata, bearing a long raceme of nine flowers. Close by is a small plant of the rose-coloured Ancistrochilus Thomsonïanus var. Gentilii.

Not many Paphiopedilums are in flower, though the one which caused such excitement last year, namely P. Fairrieanum, is represented by three good plants, all of which are in bud, and one flower has already expanded. Several plants of P. Charlesworthii are in bloom, and there is a well-flowered plant of P. × Maynardii.

Flowering very freely in the Cool house is a batch of Stenoglottis longifolia and the pure white S. longifolia alba, with the allied S. fimbriata. They are natives of South Africa and Natal, and are of easy culture, and when in flower are very attractive. A few flowers are still to be seen among the Odontoglossums, such as O. crispum, O. Pescatorei, O. Lindleyanum, and O. grande. An old familiar plant, though now past its best, is worthy of mention, namely Calanthe × Dominii, the first hybrid Orchid which flowered. It produces its light purple flowers very freely every year. Numerous species of botanical interest might have been added, and several other of the familiar showy kinds, as the species in flower in this rich collection are always numerous.

A plant of the remarkable Arachnanthe Lowii is producing a fine spike in the adjacent Victoria House, but the absence of shading here evidently renders the position unsuitable for the health of the plant, the leaves having become yellow.

VANDA TERES CANDIDA.

VANDA TERES is one of our most beautiful Orchids when successfully grown in a nice sunny position, and the splendid group shown at the Temple Show three years ago from the collection of Leopold de Rothschild, Esq., will not soon be forgotten. But it is remarkable how rare the white variety candida is, though it was described as long ago as 1875 (Rchb. f. in *Gard. Chron.* 1875, ii., p. 225), when it appeared in the collection of Lord Crewe. Reichenbach described it as having flowers with the "colours of Dendrobium infundibulum—white with some yellow on the lip." We are inclined to think that it must have been lost sight of in this country, for the one figured in the *Orchid Album* (ix. t. 409) under this name has a rosy stain on the front lobe of the lip, and thus is more like the variety aurorea (Rchb. f. in *Gard. Chron.* 1881, i. p. 688), which was described as a lovely variety, with snow white flowers, and a light rosy hue on the interior part of the lip, and some light-yellow in the throat. The one here figured flowered in the Royal Botanic Garden, Calcutta, in April, 1899, and Mr. Griessen describes the flowers as pure white, as white as any Orchid may be expected to be, with only the disc yellow, and he remarks that he only knows of another specimen, which flowered in the Agri-Horticultural Gardens at Allipore. It is evidently as rare as it is beautiful.

Fig. 38. VANDA TERES CANDIDA.

Vanda teres is one of the few Orchids which seems able to stand the brightest sunlight without injury, and should be grown in a corner of the Warm house where it can get plenty of direct sunlight, without any attempt at shading.

BRASSAVOLA NODOSA AND THE CALABASH TREE.

SOME time ago I sent to the *Orchid Review*, pressed flowers, accompanied by a rough sketch, of a pretty little Brassavola, usually found growing here on oaks in open grassy country: never in our tall timber forests. These little plants are often found in great masses, exposed to strong winds and considerable sunshine. It was determined as a small form of B. nodosa. I suspected that it was close to B. nodosa, though the plant is not often more than two or three inches in height. The flowers are borne singly or in twos, and occasionally threes, on slender two inch scapes, quite large for so small a plant. The sepals and petals are linear, two inches in length pale greenish white; and the labellum quite large, pure white, exhaling a delightful fragrance at night.

Recently a friend sent me a dozen plants of a Brassavola from the Pacific coast side of Chiapas, which much resembles our species, and I am inclined to believe, must be the typical form of B. nodosa, as the pseudo-bulbs are more than double the length of the local form. Several have already flowered, and there is little difference to be detected. The flowers are, however, slightly larger. One curious fact I have noted, viz: a very remarkable difference in odour: the local one having a delicate jasmine-like fragrance, while the one from the Pacific side is scented like some of the odorous Phyllocacti. Both forms give out their odour at night only.

As we have no oaks here, I attached them to the limbs of the calabash tree, where they quickly rooted. Referring at greater length to this tree—Crescentia species—I would urge upon all amateurs living in the tropics, who are at all interested in the cultivation of Orchids, to utilize this tree for the purpose above indicated. I know of no tree so remarkably adapted for growing Orchids upon as the calabash. There appears to be a singular combination of conditions that are most favourable to root development. I may add, however, that, in establishing the calabash tree in a garden, it should be situated in a perfectly open, sunny place, where it gets free ventilation from all the breezes that blow. It prefers, for its best development, porous, well drained soil, and can be grown from large truncheons two or three inches in thickness and four or five feet long, by merely placing them in the ground as one would set a post, planting, say a foot or eighteen inches deep. Here, in this climate, we have found the largest number to root when planted in the winter season, that is, in December or January, when there is very little rain; they will then slowly form a callus, and be ready to start off with the first rains in May or June, and, in a couple of years, are large enough to accommodate quite a number of Orchids.

I have, already, one small calabash tree about ten feet high, from which proceed a number of lateral branches, with the following Orchids established

thereon :—Oncidium Cebolleta, O. luridum, O. Papilio, O. iridifolium, O. stramineum, O. sphacelatum, O. Cavendishianum, Brassavola linearis, B. nodosa, Epidendrum atropurpureum, E. alatum, E. Stamfordianum, Laelia anceps, Dendrobium nobile, D. Dalhousieanum and D. bigibbum, and I have no doubt that, in time, I shall be able to establish a great many other species, though, doubtless, the shade-loving sorts might not do so well.

Santa Lucretia,
Vera Cruz, Mexico.

J. C. HARVEY.

DENDROBIUM PIERARDII IN BURMA.

"I AM sending you a photograph of Dendrobium Pierardii, which flowered on the 27th of May, 1906. Some of the stems are more than seven feet long, flowering in fascicles of two or three blossoms from each node, throughout the greater part of the length of the stem. Four of the stems had more than 120 flowers each. The total number of flowers on this Orchid amounted to 1,346. At the time of flowering the stems were leafless, but now each stem has put forth four or five new growths from different nodes. I have several plants of this species, but none flowered so profusely as the one photographed. I send this photo as it may be of some interest to you."

J. WORSLEY.

Govt. High School,
Akyab, Burma.

[The photograph shows a remarkable plant, with numerous slender pseudobulbs, literally wreathed in flowers. It is in a basket, and appears to hang from the roof of a verandah, in front of a trellis work. The photograph is half plate size, and of course shows all the details enormously reduced. It is a very fine example, and the pseudobulbs would be almost too long for some of our modern Orchid houses, where small plants of the species are occasionally seen.—ED.]

HYBRIDS AND THE USE OF THE "×."—The use of the sign of hybridity, "×," was adopted many years ago to distinguish hybrids from natural species, but hybrids have become so numerous during recent years that it leads to great inconvenience to have to distinguish them individually in this way, besides taking up much space, and the *Gardeners' Chronicle* has now discontinued the practice in its reports. For three years we have omitted the sign from our annual Index in the case of Lælio-cattleya, on the ground that all Lælio-cattleyas are hybrids, and it occurs to us that the practice might be extended to all hybrid genera. We propose to carry this out in future—indeed, it has been adopted during the last two months in our reports—but we do not propose to carry it further, at all events for the present.

ORCHIDS AT GUNNERSBURY HOUSE, ACTON.

ORCHIDISTS among the delegates to the Hybridisation Conference who visited the remarkable gardens at Gunnersbury House, Acton, on Friday, August 3rd, at the kind invitation of Leopold de Rothschild, Esq., were pleased to find that the Orchid collection is an increasing one, several houses being now devoted to them, and they appear to be thriving just like everything else under Mr. Hudson's care. There is a Cattleya house devoted to species and hybrids of Cattleya, with a fine series of Lælio-cattleyas, but we only noticed a couple of good Cattleya Harrisoniana actually in flower. An adjacent house contained a nice batch of the beautiful Vanda cœrulea in bloom. We also noted a fine lot of Dendrobium formosum, which has long been cultivated here with great success, and Mr. Hudson pointed out several sturdy little seedlings growing on an imported plant, having come home with it. A batch of Cattleya Trianæ, Dowiana and Warscewiczii were doing well here.

A house is now devoted to Odontoglossums, the plants being arranged well up to the light, with ample shading, and appear very promising. Not much was in flower, but it may be remembered that one interesting novelty has appeared here, namely, O. × Hudsoni, described at page 143, as a natural hybrid between O. gloriosum and O. Hunnewellianum. In another house we saw a fine spike of the handsome Phalænopsis amabilis, and plants of the brilliant Habenaria militaris, with a fine panicle of Oncidium varicosum Rogersii, and further along we noticed plants of Epidendrum vitellinum, Cattleya Leopoldi and C. Gaskelliana in bloom. It was a hurried visit, as there was so much to see in other departments, and perhaps we shall be able to see more of the collection on some future occasion.

HYBRIDISING WITH MIXED POLLEN.

A FLOWER of a very pretty Lælio-cattleya is sent from the collection of R. G. Thwaites, Esq., of Streatham, by Mr. J. M. Black, who writes that it is a seedling from Lælia xanthina, but that the pollen parent is uncertain, because one pollen mass from Cattleya gigas and one from C. Dowiana aurea were used simultaneously, and the question is what has happened? The two pollen parents are not structurally very different, and as the seed parent is yellow, it may be a little difficult to decide the parentage. Could anything equivalent to a cross with C. × Hardyana be obtained by this means? Lastly, is it not possible that two distinct crosses may be obtained from the same pod?

The flower sent is larger than Lælia xanthina, and light yellow in colour, with a light purple front lobe to the lip, the veins being somewhat

darker, and the disc yellow. In short it appears to be Lælio-cattleya Phryne, the hybrid with C. Warscewiczii (gigas). The cross with C. Dowiana aurea, namely L.-c. Ophir, has, we believe, more yellow flowers with a darker lip. What we should say has happened is that a pollen tube from C. Warscewiczii has grown down the style, into the ovary, and entered the micropyle of the xanthina ovule, thus producing the hybrid named. Other pollen grains doubtless took a similar course, and some of these *may* have been from C. Dowiana, in which case the capsule *may* yield also L.-c. Ophir. Mr. Black should watch the development of any other seedlings from the same pod. We do not remember a case where two distinct hybrids have appeared out of the same capsule in this way, so that the experiment is interesting. But nothing equivalent to a cross with C. × Hardyana need be expected. It could only happen if a pollen tube from each species entered the micropyle of the ovule at the same moment, and we believe that this is impossible under ordinary circumstances. To get a hybrid from three species, two of them must first be united, in other words one of the parents must itself be of hybrid origin, and in order to get a hybrid composed of L. xanthina, C. Warscewiczii and C. Dowiana one must fertilise the first-named species with pollen from the hybrid C. × Hardyana. We shall hope to hear of any further developments from the cross mentioned.

ORCHIDS IN SEASON.

SEVERAL beautiful Orchids are sent from the collection of J. J. Neale, Esq., of Penarth, by Mr. Haddon, including Cattleya Aclandiæ, the rather rare C. Lueddemanniana, Odontoglossum apterum, the white-lipped O. bictoniense album, and a small O. crispum with a blotch on each segment. There are also Miltonia Regnellii and its variety purpurea, Oncidium longipes, a flower of the rather rare Angræcum Scottianum, Paphiopedilum Parishii, a spray of Polystachya laxiflora and the green Epidendrum umbellatum, forming quite an interesting little group.

Cattleya Gaskelliana is known to be very variable in colour, and is a very useful species at this season. A good, brightly coloured, and fairly typical form is sent from the collection of Walter R. Scott, Esq., Crieff Villa, Chester-le-Street, together with a pretty, delicate rosy lilac form, the latter having been purchased from the collection of the late Reginald Young, Esq., of Liverpool.

A flower of the pretty little Lælio-cattleya Proserpine, in which the characters of Lælia Dayana and Cattleya velutina are combined, is sent from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, by Mr. Smith, together with a flower of Listrostachys caudata, whose long, twisted spur gives it a very singular appearance.

A five flowered inflorescence of Lælia crispa Westonbirt var. is sent from the collection of Major Holford, Westonbirt, Tetbury, by Mr. Alexander. It has a good open lip, the front lobe of which is occupied by a very large dark purple blotch.

ONCIDIUM × STANLEYI.

AT the R.H.S. meeting held on August 28th last a very beautiful Oncidium was exhibited by Messrs. Stanley and Co., Chase Side, Southgate, under the name of Oncidium × Stanleyi, to which an Award of Merit was given. It is said to have come home in an importation of Oncidium Forbesii, O. prætextum and O. curtum, and is supposed to be a natural hybrid between the last-named and O. Marshallianum, which grows in the same district. The plant bore two fine branching panicles, with an aggregate of over one hundred and twenty flowers, fairly intermediate in size and shape between the two species named. In fact, it most resembles O. Marshallianum in its bright yellow ground colour, while the crests are much more like those of O. curtum. The flowers have an expanse of over an inch and three-quarters across the petals. The dorsal sepal is broadly elliptical, obtuse, slightly concave, 7 lines long, and the colour bright yellow, with three or four broad, light-brown bands, and a few additional spots, while the lateral pair are rather narrower, and diverge above the narrow united base. The petals are broadly unguiculate, nearly orbicular, retuse, undulate, 8 to 9 lines broad, and bright yellow, with a large, elliptical, light brown blotch, and a few spots nearer the margin. The lip is nearly an inch long, the side lobes very minute, and the front lobe very broadly dilated, broader than long, and bilobed at the apex. The unguis is short and broad, and the crest bilobed at the apex and base, with an additional ear-shaped tubercled crest on each side at the base of the side lobes. The colour of the lip is bright yellow, with the tubercles of the crest light brown. The column wings are very short, entire, and light yellow, closely dotted with brown. It is very distinct and handsome. R. A. R.

THE HYBRIDIST.

BRASSOLÆLIA × FLADOSA.—A very distinct and pretty little hybrid was exhibited at the R.H.S. meeting held on August 28th, from the collection of Jeremiah Colman, Esq., Gatton Park, Reigate, of which we have received a flower. Mr. Bound states that it was derived from Brassavola nodosa grandiflora ♀ and Lælia flava ♂, and the specific name is taken from that of its two parents. The plant has several erect monophyllous pseudobulbs, and the fleshy leaves are oblong in shape. The scape had two flowers, in which the characters of the two parents were clearly combined. The sepals and petals are spreading, slightly recurving towards the apex.

and linear-lanceolate in shape, the latter having an expanse of three inches, and their colour is primrose yellow, with several purple-brown spots, chiefly on the basal half, and most distinct at the back. The lip is an inch and a half long, entire, convolute at the sides on the narrow lower half, and expanded in front into a broadly elliptical, undulate limb, with a recurved apiculate apex, its colour being primrose yellow with a few light reddish purple dots in the throat, and some larger darker ones at the base of the tube outside. The column is about a third of an inch long, and also bears a few small spots. It is quite a distinct type, and altogether a very interesting little plant.

BRASSOCATTLEYA × CORDELIA.—A new hybrid raised in the collection of Major G. L. Holford, Westonbirt, Tetbury, from Cattleya intermedia ♀ and Brassavola Digbyana ♂, which has just flowered there for the first time. Mr. Alexander remarks that it is the second cross to flower between B. Digbyana and the long-bulbed Cattleyas, the first being B.-c. Madame Hye, which received an Award of Merit at the recent Holland House Show. He thinks that many fine hybrids will be produced from the long-bulbed section of Cattleya and B. Digbyana. The flower was a little faded when received, but is pale blush almost throughout, with the sepals and petals rather narrow, and the lip strongly three-lobed, with all the lobes prettily fringed. It is very distinct, and probably not yet fully developed.

CATTLEYA × SAXA.—By an inexplicable error, the name of this pretty little hybrid between Cattleya Bowringiana and C. Schilleriana appeared at page 252 as Lælio-cattleya Saxa, which should be corrected.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during September, on the 11th and 25th, when the Orchid Committee will meet at the usual hour, twelve o'clock noon. The subjects of the special competition on the latter date will be Cypripedium Rothschildianum and its hybrids. There will be no special competition on September 11th.

The next meeting of the Manchester and North of England Orchid Society will be held at the Royal Botanical Gardens, Old Trafford, Manchester, on Friday, September 7th, this being the only meeting during September.

Mr. W. H. Hatcher, for many years with Messrs. Charlesworth & Co., has taken an interest in the firm of J. W. Moore, Limited, Orchid Importers, Rawdon, via Leeds, and will in future travel on their behalf.

The *Evening Standard* announces that on or about October 1st a sale will be held at Vienna of a large surplus of the very fine and rare Orchids from the Imperial conservatories of Schönbrunn. Among them are some unique crosses and hybrids which are likely to arouse keen competition.

ORCHID PORTRAITS.

AERIDES HOULLETIANUM, FOWLER'S VAR.—*Journ. Hort.*, 1906, ii., p. 195, with fig.

BULBOPHYLLUM ERICSSONI, Kränzl.—*Bot. Mag.*, t. 8088.

CATTLEYA MENDELII VAR. QUEEN ALEXANDRA.—*Journ. Hort.*, 1906, ii., p. 147, with fig.

GRAMMATOPHYLLUM SPECIOSUM.—*Gard. Chron.*, 1906, ii. pp. 86, 88, fig. 35.

LÆLIO-CATTLEYA BLETCHLEYENSIS.—*Journ. Hort.* 1906, ii., p. 123, with fig.

LÆLIO-CATTLEYA DIGBYANO-MENDELII.—*Journ. Hort.*, 1906, ii. p. 99, with fig.

LÆLIO-CATTLEYA HELEN, WESTFIELD VAR.—*Gard. Mag.*, 1906, p. 514. with fig.

ODONTOGLOSSUM × AMABILE ROYAL SOVEREIGN.—*Gard. Chron.*, 1906, ii., p. 152, fig. 61.

ODONTOGLOSSUM × WILCKEANUM GOLDEN QUEEN.—*Journ. Hort.*, 1906, ii., p. 171, with fig.

SOBRALIA × AMESIÆ.—*Gard. Chron.*, 1906, ii., p. 149, with suppl. t.

SOPHROCATTLEYA WARNHAMENSIS.—*Gard. Mag.*, 1906, ii., pp. 547, 549, with fig.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired* (*abroad, reply postcards should be used*). *Subjects of special interest will be* ***dealt with in the body of the work***].

H. H. The Epidendrum is not at present identified. Epidendrums have mostly a terminal inflorescence. We should like to see the bulb and leaf, if one could be spared.

W. R. S. A very light form of Cattleya Gaskelliana. No doubt the small bulb would affect the size of the flower. The other is a well-coloured, fairly typical form.

J. C. H. Many thanks. Shall be attended to as early as possible.

A. E. W. B. Stanhopea tigrina, Paphiopedilum philippinense (Robelenii being synonymous), a native ot the Philippines, and Cattleya Grossii.

Ch. V. Your proposal will be very acceptable.

S. R. We will try to give a short article on the subject next month.

G. B. L. Oncidium insculptum. The reply was accidentaliy overlooked

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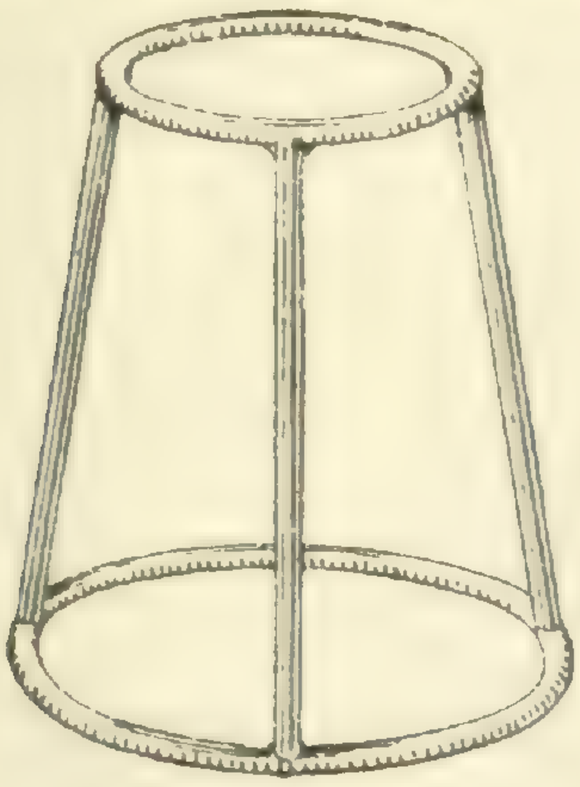

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The next MEETING of the COMMITTEE for the purpose of adjudicating upon the Orchids submitted will be held at the Royal Botanical Gardens, Old Trafford, on Friday, September 7th, 1906, at 12 o'clock prompt. Open to Members from 1 to 3 p.m.

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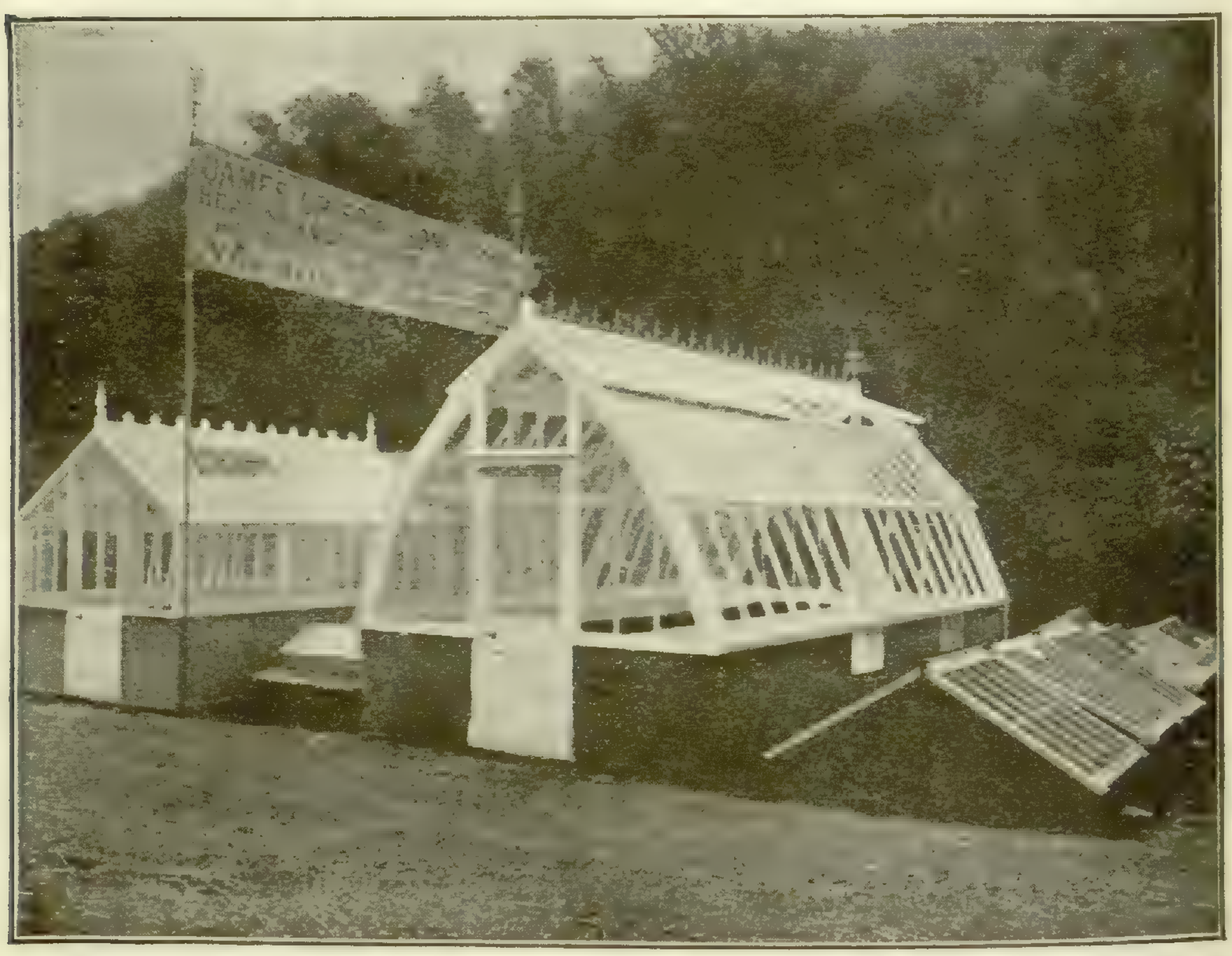

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Vol. XIV.] OCTOBER, 1906. [No. 166.

THE ORCHID REVIEW:

An Illustrated Monthly Journal of Orchidology.

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THE ORCHID REVIEW.

VOL. XIV.] *OCTOBER*, 1906. [No. 166.

DIES ORCHIDIANI.

I HAVE just received a reminder that my notes have fallen into arrear, and looking back find nothing since last February. Happily, there is no lack of material, and it is pleasant to find that someone appreciates them. An event to which I then alluded was the coming Hybridisation Conference, and now the event is past, and reports in the last two issues of the *Review* show that the claims of Orchidology were not overlooked—indeed the Chairman in his opening address alluded to the worker who was "engrossed and perhaps lost in the idiosyncrasies of Orchids," and how he might be rescued by discoveries concerning Peas, or even Mice or Lepidoptera. And this reminds me that he alluded to the first Hybridisation Conference as having taken place eight years previously, in July, 1898. I had forgotten the date, but turning up the Report in my copy of the *Review* I find that it was seven years ago, in July, 1899. But I shall never forget the atmosphere in the big Vinery at Chiswick on that memorable occasion, and I alluded to it at the time as "like that of a Turkish bath." A good many events have happened in the Orchid world since then, but I cannot stop to allude to them, and with respect to the recent Conference it will suffice to say that the event passed off with great *éclat*, and every one appears to have been delighted with the proceedings generally. We shall now await the appearance of the Official Report with considerable interest.

A year ago, more or less, we were all in a state of excitement over the "lost Orchid," and while all else was doubtful one fact at least seemed certain, and that was that the plant in question was one known for nearly half a century as Cypripedium Fairrieanum, which originally appeared in the collection of Mr. Fairrie of Liverpool. It was, therefore, rather a shock to be told that this was not the plant, after all, and that the real Simon—no, I mean "Adam's Fairrieanum" was something quite different. Was not its portrait, painted at the time, still in existence? And was not the said portrait actually reproduced in the *Review* last April (p. 105), from a photograph, too, so that there should be no mistake. Were

we not assured that the re-discovered plant was one which Mr. Fairrie set no particular store by, though he was extremely proud of the other? It was a disquieting circumstance, especially as the new claimant was unquestionably Cypripedium hirsutissimum, which all the books agree did not appear until two years after the painting in question was made. The explanation is interesting, though it leaves other matters unexplained. There is no doubt which of the two species was named after Mr. Fairrie by Dr. Lindley, and it is equally certain that both existed in the collection of the former. But can it really be that Mr. Fairrie never knew which was the one named in his honour? If this be not the case there remains the question how and when the name was transferred to the one now known as C. hirsutissimum. At least this is how I read the last interesting but rather mysterious chapter in the history of this much discussed plant.

Something new is always turning up in Orchid culture, and that, I think, is one of the reasons why it is so fascinating. We have now the question of Fungus Co-operation in Orchid-roots, so carefully investigated by M. Noel Bernard, and also illustrated by him at page 201. It would appear that if the particular fungus is absent the seeds fail to develop beyond a certain stage, but if present they progress steadily from the commencement. The inference is that the young Orchid cannot avail itself of the food supply until it has been in some way prepared by the fungus. But while the Orchid seedling seems unable to get on without the fungus. the latter can get along without the Orchid, for M. Bernard stated at the recent Hybridisation Conference (see p. 265) that it could be grown in sterilised tubes on a suitable nourishing medium, and transplanted from tube to tube without losing its power to grow—in fact he had pure cultures of spores living after four years of separation from the Orchid roots. Here then is one of the "tame" fungi which Mr. Gurney Wilson (p. 155), was speaking about, and of which Mr. Black enquired (p. 117):—"Could not this fungus be cultivated and handed round, so that we could 'inoculate' a seed pan as occasion required?" The question has now been answered in the affirmative, and M. Bernard thinks that it would be sufficient to propagate these cultures so as to give all cultivators facilities for germinating Odontoglossum seeds as readily as those of Cattleya. He had found three species of these Orchid fungi, but he had not yet named them. I thought the nomenclature question must come in somewhere.

But there is one phase of the subject I have omitted to mention. It would appear that the kindly fungus sometimes gets the worst of the arrangement, because after assisting the Orchid seedling over his difficulties for a time, the latter "suddenly asserts itself, falls upon the fungus, and devours

it." Here's base ingratitude! I really hope Prof. Henslow has libelled the Orchid seedling, because, if not, I shall think less of him in future. When looking at M. Bernard's interesting photograph one cannot help thinking of some possible tragedy about to be enacted.

I think a few of our growers must have laid in a large stock of these fungi—whether they are aware of the fact or not is another matter—for the progress in raising Odontoglossum seedlings during the last few years has been remarkable. I alluded to this matter in my last notes, but since then O. × Stewartianum and O. × Eurydice have been figured in these pages, not to mention the eight beautiful forms exhibited by M. Vuylsteke at the Temple Show. Then O. × Elaine has appeared, from O. cirrhosum and Harryanum, and O. × Terpsichore from O. Pescatorei and polyxanthum, not to mention the new Odontioda × heatonensis, from Cochlioda sanguinea and Odontoglossum cirrhosum—certainly a remarkable series.

Speaking of Odontioda reminds me of the new figure of the original O. × Vuylstekeæ, given at page 217, showing that the plant has now produced a spike of no less than thirty-two flowers, a truly remarkable development. The plant is evidently as robust as it is beautiful, and it is good news that other seedlings of it are in existence.

It is rather interesting to see a figure of the original Phalænopsis amabilis, of Blume, under its correct name (p. 233), with a note on the remarkable confusion in its history. I alluded to the matter about a year ago, when the question of unnecessary changes in nomenclature cropped up, and perhaps in time we shall get used to calling the plant by its right name.

I observe a note on "Hybridising with mixed pollen" at page 284, and I hope that we are not on the eve of a new departure. What with stray seedlings, lost records or none at all, and a perplexing variation among seedlings out of the same capsule, there are difficulties enough already, without the latest development, and it is satisfactory to note that nothing practicable seems likely to come out of it. If the thing could be worked successfully, there is no telling what might happen, for there would be no need to stop at two species, one might mix three or four, or half-a-dozen, until at length one might introduce a perfect blend of pollen, with their attendant characters, all at once. Indeed one might almost arrange the result beforehand, if the necessary pollen were available. Happily, as it appears to me, we are told that the thing won't work, the result being the same as if pollen of one kind only is used, except as to the uncertainty

as to which species was the actual pollen parent. I suppose the unfortunate recorder must puzzle it out for himself every time, and if so his lot will not be a happy one. There is quite enough of this already.

The note on a floating Orchid, at page 250, is very interesting, for a truly aquatic Orchid must be something of a novelty. There is not often much waste space in an Orchid house, for stages and shelves are generally fully occupied, as well as every available peg or wire under the roof, but the most ingenious Orchidist has not yet been able to utilise the water-tank for this purpose. But the plant is not yet introduced.

ARGUS.

NOVELTIES.

TAINIA FUERSTENBERGIANA, Schlechter.—A species which flowered in the collection of Baron von Fürstenberg in February last. It is said to be allied to T. penangiana, Hook. f., which it greatly resembles, and has olive green flowers. Its habitat is unknown, but most of the species are Indo-Malayan.—*Orchis*, p. 4.

GONGORA BEYRODTIANA, Schlechter.—A Columbian species, introduced with Cattleya Trianæ, which flowered with Herr Otto Beyrodt, at Berlin, in February last. It is closely allied to G. truncata, Lindl., and has pale yellow sepals and petals, spotted with purple, and a white lip.—*Orchis*, p. 4.

ONCIDIUM JOHNIANUM, Schlechter.—A Brazilian species, which flowered with Herr R. W. John, at Andernach, Germany, in May, 1905. It was imported with Miltonia Clowesii, Cattleya Harrisoniana, and others, and is said to be allied to O. Wentworthianum, Batem. and O. pergameneum, Lindl., of the section Basilata. The flowers are yellow, blotched with brown.—*Orchis*, p. 4.

BIFRENARIA FUERSTENBERGIANA, Schlechter.—A Brazilian species, introduced from the province of Santa Catherina, and flowered in the collection of Baron von Fürstenberg. It is said to be allied to B. calcarata, Rodr., and has yellowish green flowers.—*Orchis*, p. 25, fig. 12.

MAXILLARIA BINOTI, De Wild.—A Brazilian species, introduced by M. Binot, and flowered in the Brussels Botanic Garden. It is said to be allied to M. rigida, Rodr., and has yellow flowers with some minute purple spots on the lip.—*Orchis*, p. 25, fig. 13.

LYCASTE HENNISIANA, Kränzl.—A Columbian species, introduced by Herr W. Hennis, and allied to L. gigantea, Lindl. The flowers are said to be among the largest in the genus, and are green, with a white undulate lip.—*Orchis*, p. 33.

DENDROBIUM TONKINENSE, De Wild.—A species of the Distichophyllæ group, allied to D. revolutum, Lindl., but said to differ in the characters

of the lip. It was introduced from the province of Thua-Thien, in Tonkin, by M. G. Bronckart.—*Trib. Hort.*, i. p. 21.

Dendrobium ochraceum, De Wild.—Another Tonkin species discovered by M. G. Bronckart, but not yet introduced alive. It is said to be near D. Draconis, Rchb. f., but is much dwarfer. The flowers are white, striped with carmine on the lip.—*Trib. Hort.*, i. p. 41.

Paphiopedilum affine, De Wild.—This also is from Tonkin, and is presumably of the same origin as the preceding, though this point is not recorded. It is said to be allied to P. villosum and P. dilectum.—*Trib. Hort.*, i. p. 57.

Angræcum Arnoldianum, De Wild.—Introduced from the Congo by M. S. Bieler, and flowered in the Jardin Botanique de l'Etat, Brussels. It is evidently identical with A. Eichlerianum, Kränzl.—*Trib. Hort.*, i. p. 83. t. 6.

DENDROBIUM RHODOSTICTUM.

About six years ago a pretty little New Guinea Dendrobium appeared in cultivation bearing the name of D. Madonnæ. It was introduced and distributed by Messrs. Sander & Sons, St. Albans. In December, 1899, Messrs. Sander forwarded a living specimen to Kew, with a request that if the species proved new the provisional name given should be adopted. On January 23rd, 1900, it received a Botanical Certificate from the R.H.S., when the name was recorded (*Gard. Chron.* 1900, i. p. 62; *Orch. Rev.* 1900, p. 61), and afterwards it was figured in the *Botanical Magazine* (t. 7,900). It now appears that it has an earlier name, having been described several years previously as D. rhodostictum (F. Muell. & Kränzl. in *Oester. Bot. Zeitschr.* 1894, p. 300), from a dried specimen collected at Bouawarri, New Guinea, at 2,000 feet altitude, by Sayer. It was said to belong to the section Eudendrobium, and as there was no further clue to its affinity it was very unlikely to be identified with D. Madonnæ, which Lindley would have put in section Dendrocoryne, close to his D. Mooreanum, and the *Genera Plantarum* into the enlarged section Stachyobium. It is not a Eudendrobium in any case, but as Dr. Kränzlin says that the two species are identical the determination must be accepted. Another ally is D. Fairfaxii, Rolfe, a native of the New Hebrides. D. rhodostictum takes its name from the numerous purple spots on the front margin of the lip. It is a very floriferous little plant, growing and flowering freely under the treatment given to D. Phalænopsis, D. atroviolacum, and other species from New Guinea and the adjacent region. It has much of the general habit of D. atroviolaceum, Rolfe, which also belongs to the same group, though the two differ much in the colour of the flowers.

R. A. Rolfe.

ORCHID-GROWING AND COLLECTING IN JAVA.

By E. CONNELL, Alas Bezoekie, Loemadjang, Java.

(*Concluded from page* 261.)

VANDA SUAVIS is more shade-loving, and comes forward on the edges of jungles, old, abandoned coffee trees being a prolific source, though I have found it on bare exposed places also, on the side of the Arenga palm, in the full blaze of the sun, also upon half dead trees, apparently quite happy and blooming freely, although the leaves have a yellowish tinge. There are many varieties of this Orchid, varying in the richness size and shape of their flowers. Some are very heavily blotched with rich red-brown, and have the sepals very much turned back; the foliage varies greatly also. Plants vary in size from incipient growth up to specimens with 24 pairs of leaves, and two to three shoots with from ten to twelve each. I count my specimens by the thousand, or did until recently, so that there is always a fine show of bloom. Vanda tricolor comes from the west of the island, and I have never seen or obtained any from East Java. V. helvola is obtainable, but is not very common; also V. limbata, a very showy Vanda. I am told there are four or five varieties. Mine have brownish red petals, tessellated and edged with yellow, and the lip is a bright rosy purple.

Cœlogyne speciosa, Sarcochilus, and Erias, are mostly found in the cooler depths of the jungle, upon large trees or small ones, and fallen logs, where little or no sun penetrates, and the atmosphere is very moist. though they will stand plenty of light in cultivation, and flower more freely. Cœlogyne speciosa varies greatly, and has both long drooping and short flower spikes. The sepals are pale olive sepia and pale green, and the throat varies in shades of red to almost black.

Among the ferns, canes, and other undergrowth, are to be discovered at intervals, Calanthe Ceciliæ, Phaius maculatus, P. grandifolius, P. Zollingeri, Cymbidium lancifolium and Cypripedium javanicum, though not necessarily all together. As a rule when one plant of a species is found there are others close at hand, and then you may wander for weeks and never see another. All the terrestrials named above grow in the rich leaf mould in jungle humus, and mostly with their roots well exposed. These spread out from the base of the plant, and creep on the surface at first, gradually penetrating into the humus for a few inches. This is particularly noticeable in Phaius maculatus, whose pseudobulbs are always well above the ground. Cymbidium lancifolium and Phaius grandifolius are also found with roots or bulbs well above ground, and grow best so planted, in leaf mould, with a little charcoal and good drainage.

Calanthes of the vestita order grow well on decayed wood, an old stump thoroughly rotten, broken into pieces, mixed with the fine fibry roots of selaginellas, forming an excellent compost; also for all Javan Cymbidiums. Keep them on the dry side, and well drained. Cypripedium javanicum is also best kept fairly dry. I grow mine in leaf mould and fine soil, but if kept constantly moist they rot rapidly. I keep them dry, and give them as much light as I can without sun, and they are doing much better now, though I lost a good number by letting them get soaked every day in the open.

All the kinds which will grow on moss form excellent subjects for basket treatment. Many of the Vandas, after establishing themselves on their balls or pads of moss, are transferred to Cedar baskets, which gives the roots further opportunity to extend, besides presenting a more pleasing appearance. Aërides and Saccolabiums are also treated in this way, and root on to the wood very soon.

I am afraid that at the present time, when such species are more or less neglected, this account will not prove of much interest to readers of the *Orchid Review*, but you will easily understand that for anyone engaged in planting life out here, it would be folly and waste of both time and money to acquire a costly collection of other Orchids, or hybrids, or even to do much in the way of hybridising oneself. Constantly moving about, and changing estates, is much more the rule than the exception.

Much of the pleasure in cultivating these beautiful and interesting plants is derived from the personal search and the odd hours of jungle hunting, by one's self. It is somewhat lonely in the almost unbroken silence of the forest, with never a sound but the drip, drip of the leaves during the rains, the snapping of twigs under foot, or the sudden scurry of a lizard. Unlike an English woodland, which is full of the song of birds, here all forms of life are silent. A noiseless bird flits across from one bamboo clump to another, and now and again a parrot or a monkey sounds a warning note at the unaccustomed noise of the human foot below, but the fascination of the probable discovery is as attractive as fishing, for one never knows what will reward patient search and effort. Sometimes an Orchid, now and again an aroid—a beautiful Alocasia—or a new plant, perhaps in a watercourse or a steep ravine, where the sun's rays never penetrate, a lovely fern whose fronds are perpetually moistened by the spray from a cascade or the drip from a hidden spring. Hours pass by unnoticed, and after trudging up and down ravines, in beds of mountain streams, it is a pleasure to emerge into the bright sunshine, and see the blue skies once more, especially if one loses one's bearings, as it is very easy to do, dodging about to all points of the compass. I have often lost myself, and after getting into the bed of a watercourse, rather than climb

up again, have splashed my way along this muddy channel until I emerged into the light of day, but it is nothing when one is keen, and these are the places where the filmy ferns come from.

Having acquired all the best Orchids of this district; I am now turning my attention to the aroids and ferns, Lycopods, Selaginellas, Davallias, and Platycerims. Caryota is here, and resembles a tree Adiantum. Silver ferns also, but I have never seen a gold fern, though there are lots in other parts of Java. Old coffee gardens, as well as the jungle, are good finds for Orchids and ferns. An old cedar or other log that has lain for years under shade is generally covered with various lichens, mosses, and a dozen different ferns. Truly it is an ideal spot in which to cultivate a hobby, and for those with eyes to see, what a wealth of material, to interest and instruct. To the right of me an active volcano 13,000 feet high, to the left another, smaller, though equally lively at times, away in front of me, below the entire plain, with its white sugar mills dotted about, and the paddy fields and maize patches of the natives, and the sea showing faintly in the distance.

For the horticulturist or the entomologist, or those with a taste for the *simple* life and solitary, there are worse places than Java; every conceivable colour in plant, shrub and tree, gorgeous insects and painted caterpillars of all kinds, moths and butterflies of all shapes, sizes and colours. Here you may study at first hand earthquakes and volcanic eruptions, walk upon an extinct crater, known as the "Sand Sea," whose dimensions I should be sorry to state off hand, but walking across diametrically will take you considerably over an hour, and in the centre is another small crater, known as the Bromo, up to the rim of which you can climb and look at, if the day should be fine, a seèthing, boiling sulphur spring, with a smell of brimstone pervading everything around. A wild, desolate spot, the crater being of a perfect shape like an inverted cone, in subdued colours of grey and dull red, the place might stand as a fitting entrance to the "Hades" of Dante, or anyone else. Planting life is lonely, and very isolated, but I defy anyone to say it is dull.

I am glad to say I can take an interest in things—Orchids, flowers, plants, and ferns—and prowl around with an eye to the elevation at which I find myself, and fill up any spare time on my hands. In the garden are various Acacias, Gardenias, Allamandas, Brugmansias, Peony roses, Syringas, Durantas, Cassias, Eucharis and other lilies, Zinnias, Dracænas, Gloxinias, China asters, Tree ferns, Begonias, Caladiums, Mulberries, Lemons, Citrons, Bananas—but I have wandered off the track, and away from describing my Orchid farm.

MILTONIA SPECTABILIS.

Miltonia spectabilis is one of the most charming of autumn-blooming Orchids, and we now publish a figure, together with its dark purple variety Moreliana, these being reproduced from a photograph received, with some others, from Dr. A. W. Hoisholt, Stockton, California, in 1900. Dr. Hoisholt then wrote :—"A year and a half ago I purchased from Messrs. Lager and Hurrell, Summit, New Jersey, a plant of Miltonia spectabilis, which Mr. Lager thought would prove to be the variety Moreliana. It was composed of three pieces. The smallest flowered as ordinary spectabilis, the second produced a flower of a very dark Moreliana, while the two leads

Fig. 39. Miltonia spectabilis. Fig. 40. M. s. var. Moreliana.

of the third piece developed flowers quite different from either, having a pure white flower, with broad segments, and short magenta-purple rays radiating from the disc. It forms a complete contrast with, and is almost an albino form of, the dark Moreliana. Is it M. spectabilis var. radians? I enclose a dried flower, with photographs of all three."

This flower quite agrees with the variety radians, which flowered in the collection of Senator Jenisch, of Hamburg, in 1855, according to Reichenbach's description (*Xen. Orch.* i. p. 130), and the same variety was afterwards figured in the *Orchid Album*, iv. t. 164). The photograph of the two well-known forms we have selected for reproduction, but as the history

of the species was given fully in an early volume (iii. pp. 295, 296) we need not say much about them. M. spectabilis was originally sent from Brazil in 1835, by a Mr. Frye, to the Birmingham Botanical and Horticultural Society, but is said to have first flowered in this country with Messrs. Loddiges, of Hackney, in 1837. This original form had white sepals and petals, with a vinous-purple lip, shading off into rosy lilac towards the margin, and the veins darker in colour towards the base. Dr. Hoisholt's plant (fig. 39) approximates to this original type. The variety Moreliana (fig. 40) was originally introduced by M. Porte, who sent it to M. Morel, of St. Mandá, near Paris, in 1846, and it was described and figured five years later (*Henfrey Gard. Mag. Bot.* iii. p. 41, with plate). A form figured in the *Botanical Magazine* in 1849, as M. spectabilis var. atrorubens (t. 4425), without any account of its origin, appears to be identical.

These beautiful plants are well adapted for culture in hanging pans, which are preferable to baskets. They should be well drained, as the plants like a liberal supply of water during the growing season. They should be suspended in the shadiest part of the Cattleya House. The flowers are generally produced during July and August, and last a long time in perfection.

THE LATE REGINALD YOUNG'S COLLECTION.

I PURCHASED a few plants at the sale by auction of the late Mr. Reginald Young's collection on July 18th. The labels on the plants give the names, and other letters, such as "L.L.," "J.C.," &c., also crosses or stars "**." It would be very interesting to know the meaning of these, not only to myself but to other purchasers as well.

Rochdale. D. A. LAW.

We should think that the letters mentioned indicate the source whence Mr. Young obtained the plants, "L.L.," indicating L. Linden and Co., "J.C.," John Cowan and Co., &c. The "**" probably indicate quality, as the sign is often used in this sense to identify plants when out of flower. The sign of hybridity "×" is not mentioned, and probably explains itself, though used in two different ways. For example Cypripedium "barbatum × niveum" would indicate a plant obtained by intercrossing those two species, while in the case of "C. × Leeanum" the sign would be used to indicate that the plant was a hybrid not a species. We hope that all records obtained with these plants will be preserved, for Mr. Young made so many experiments, and the records will be important when the seedlings flower. We believe that only part of the collection was sold on the date mentioned, but that the remainder are to be disposed of, and Mr. Young's able Orchid grower, Mr. T. J. Poyntz, is seeking an engagement.

ORCHIDS AT CLARE LAWN, EAST SHEEN.

THERE is a seedling Odontoglossum in the Clare Lawn collection in which we are greatly interested, as it was derived from O. maculatum ♀ × Rossii ♂, in the hope of proving the parentage of the natural hybrid O. × Humeanum, Rchb. f. It originated in the collection of F. H. Moore, Esq., Royal Infirmary, Liverpool (*O.R.* vii. p. 277 : viii. p. 240), and is now six years old. Its progress has been rather slow, and as Mr. Moore's house is scarcely suitable for Odontoglossums, and Mr. Young had kindly consented to take charge of the plant, it was moved to its new quarters this spring. It is now suspended by the side of a vigorous plant of O. × Humeanum, and on calling to see it we find that it is making a good growth, and, apart from accidents its flowering is only a question of time, as Mr. Young is very successful with these dwarf Mexican Odontoglossums. O. Harryanum, sceptrum, and Pescatorei were in flower here, also Oncidium cucullatum, Miltonia candida and M. × Binoti, while a good plant of Zygopetalum maxillare Gautieri had four spikes of buds.

In the adjacent Cool Cypripedium house there was a fine display of flowers, including seven plants of C. Charlesworthii in fine condition, the best of which bore fourteen scapes, one of them twin-flowered, while a second twin-flowered scape was noticed on another plant. There was a good flower of C. Fairrieanum, a number of C. insigne just beginning to open, including the beautiful yellow variety Sanderæ, and two good plants of C. × Arthurianum, which for the first time we were able to compare with its two parents side by side in a living state. A pan of Pleione lagenaria had also several expanded flowers.

In another house were C. purpuratum and various others, with three plants of C. × Niobe in bud, Lælia pumila, and Trichopilia coccinea, also plants of Cymbidium insigne (Sanderi), and seedlings from C. grandiflorum × eburneum, pushing young spikes.

The Cattleya house contained several interesting things, as the brilliant Lælio-cattleya Dominiana langleyensis, L.-c. callistoglossa, L.-c. Gottoiana, L.-c. amanda, Cattleya × Iris, C. × Parthenia, C. labiata, Brassolælia Helen, and L. × Digbyano-purpurata Duke of Connaught, a richly coloured form, with numerous others in bud or sheath ; also a well-flowered plant of Miltonia Clowesii. It was curious to see here a plant of Oncidium juncifolium producing two young plants on the old flower-spike, and one of Epidendrum xanthinum in the same condition, an easy way of propagating the plants.

In other houses we noticed a fine plant of Cypripedium Spicerianum bearing a dozen scapes, one of them twin-flowered, the handsome Miltonia vexillaria Leopoldi, Dendrobium chrysanthum, a good batch of D.-

Phalænopsis, D. sanguinolentum, and half a dozen seedling plants in bloom of D. formosum. These are four years old, and have been grown from a mature capsule found on an imported plant. The yellow on the flower varies considerably, in one case being orange-coloured and in another light yellow. Here were also, Cycnoches chlorochilon, Oncidium Papilio, Ancistrochilus Thomsonianus, Mystacidium distichum, and Spathoglottis Vieillardii. The latter are seedlings, it was supposed from pollen of S. aurea, but the result suggests that in some way the flower must have been self-fertilised. Cattleya × Lady Ingram and Lælio-cattleya Aphrodite were in bud. A fine capsule of Cattleya Aclandiæ was pointed out as having been crossed with Lælia monophylla, and the result should be interesting.

The Phalænopsis house is always interesting. The fine batch of P. Schilleriana and others have been this year potted in polypodium fibre. and have made fine leaves. Mr. Young pointed out that for some reason the spikes were later than usual, not yet having started, and thus the more likely to escape destructive fogs later on. Several P. violacea were in flower, including the richly coloured var. Schrœderiana, and Low's var., which is whitish except on the lip and inner halves of the lateral sepals. P. sumatrana had three spikes, and seems to flower almost continuously, P. Esmeralda was also in flower, and Bulbophyllum grandiflorum, the remarkable B. virescens being just over. Zygonisia × Rolfeana was bearing three fine spikes of its handsome violet-blue flowers, with a fourth to follow, and there were many good Cypripediums, including several C. × Maynardi with numerous flowers, a fine plant of C. × Allanianum, C. × Wiganianum. C. × Helen, a pretty hybrid between C. Charlesworthii and C. Dayanum. C. callosum, C. barbatum, and C. superbiens. Saccolabium calceolus bore two umbels, the flowers not yet expanded. We noticed here a number of seedlings, some in bud, apparently a Cynorchis, and Mr. Young remarked that they were from a plant imported by M. Warpur from Madagascar, which flowered and produced a capsule without being artificially fertilised, and the seedlings now came up all over the place, and he had to pull them up as weeds. They also flower within a year of their appearance, which is remarkable. We must have the species determined. Some healthy young seedlings of Cattleya Gaskelliana alba × Mossiæ alba were pointed out, and there are a good many other hybrid seedlings in various stages in the collection.

The Cymbidiums in the rock house are doing well, numerous young spikes of C. Lowianum being observed, including the variety concolor, also C. grandiflorum. Some young plants of C. × I'Ansoni have been obtained from back bulbs, obtained when the plant was repotted. This handsome plant is at present only represented in Sir Frederick Wigan's fine collection.

CALENDAR OF OPERATIONS FOR OCTOBER.

By J. M. Black, Streatham.

There will be in flower this month Cattleya labiata and C. Dowiana aurea. They are both splendid Cattleyas when in robust health, the former being particularly floriferous, and although they are not now so indispensable as autumn bloomers as they were a few years ago—owing to the ascendancy of the hybrid—they are still most welcome, and there is a completeness and harmony about the flowers of species that a good many hybrids lack. There is an indiscribable something in the colour blending of a good many of the hybrid Lælio-cattleyas that precludes any possibility of their being taken for species, something amateurish and indefinite. It is only with the colour arrangement that I am finding fault, and what I mean is illustrated in most of the Lælia tenebrosa hybrids. Two very successful hybrids, in this respect, are Cattleya × Enid and C. × Iris. There should be a great future for albino Cattleya hybrids, for—apart from the rarity in nature of albino forms of species—the above criticism will not hold good with them, the pure white and yellow flowers of the hybrids being equal in finish to the species.

There is a disease—of a fungoid nature, I believe—that affects some Cattleyas, and C. labiata and C. Dowiana aurea seem more addicted to it than others, as far as my experience goes. An atmosphere saturated with moisture and with insufficient ventilation may safely be put down as the main cause. It is mostly in the autumn that the trouble makes its appearance. A dull, blackish streak may be noticed under the cuticle of the leaf or bulb. In a little time the leaf may fall off, and if the pseudobulb is cut through vertically it will be found that these black streaks run down its centre. If one cuts off piece after piece horizontally it will be found that the further one descends the less it becomes, which seems to point to its having had its origin in the leaf or bulb, and not at the root. Sometimes this decay runs right down to the base of the pseudobulb and along the rhizome, when there is no hope of saving the plant, and in severe cases all bulbs will be affected at once. An unhealthy condition at the root may be an auxiliary cause of this, but it is not infrequently found that the roots are perfectly healthy when the disease is first observed, and if they eventually go bad this is evidently the result of and not the cause of the trouble. A disease of this kind—if I am right in calling it a disease—appearing among plants indicates that something is radically wrong in the treatment. Keeping the plants too close at a time when they are hardening up their tissues seems to me to be unquestionally where the error is made. I have never known a plant once attacked with this disease recover, although I have heard of some. Cattleyas in flower in the autumn should be kept in

a comparatively dry atmosphere; the flowers will then last much longer, and fade naturally without any spotting. Flowers spotting with damp is already a hint that the conditions are not healthy for the plant.

Some Cattleyas, and especially C. labiata, will sometimes lose the leaf and the top of the pseudobulb, through rot, after the flowers have been cut off. This usually happens if a remnant of the sheath has been left, but not necessarily because water has lodged there. It is a safeguard to remove all the sheath and flower stalk from C. labiata to obviate the risk of any water lodging there, but the fact of the plant having this tendency to rot appears to call for a particularly dry atmosphere at the period of blooming, and after.

Some years ago I had charge of a collection of Orchids in Seine et Marne. For the most part the plants had just been recently imported, and had all their native vigour, and they were grown solely for the intrinsic decorative worth of their blooms. There were included about two thousand vigorous specimens of C. labiata, which were invaluable for table and room decoration during the shooting season. These practically filled one house. My first autumn found me slicing off the tips of scores of bulbs that had flowered and had decayed down from the sheath. The advice which was offered me from many quarters was contradictory, some telling me to cut the flower stalk through the sheath, taking care to injure the sheath as little as possible, as it was necessary that the sheath should remain and wither back naturally, while others recommended removing the thing completely. The second autumn found me resolved that there would be no more rotting of bulbs, if atmospheric dryness would prevent it, nor yet was there. The plants were carefully provided with water at the root when necessary, but the house was not damped once in three weeks or a month on end, and there was not a speck of rot visible anywhere, notwithstanding that parts of the sheaths and flower stalks were left indiscriminately; nor was there a speck of damp anywhere on the blooms, which lasted longer and dried up naturally, where not cut. And I was satisfied that I had discovered the cause of my previous year's trouble. This treatment was, of course, only possible because the house was devoted to practically one species, but still the lesson is there.

There are a considerable number of Orchids blooming or coming into bloom this month, and in all cases one should try to have the atmosphere on the dry side when the flowers are expanded. The Brazilian Oncidiums, which will include O. varicosum Rogersii, O. Forbesii, &c., will be best accommodated in the driest part of the Intermediate house, and so also will the autumn-flowering Miltonias. Lælia pumila should also have a light airy position in which to expand its flowers. Vanda cœrulea, a difficult subject to keep in robust health, should open its flowers in a dry corner of

the Cattleya house. Cypripedium insigne, C. Spicerianum, and many of their numerous hybrids, are now throwing up their blooms, and we shall soon be in the midst of the Cypripedium season again. The flowers should be neatly tied up to sticks. Sophronitis grandiflora is growing and pushing up its buds with the young growths, and should not be neglected at this season. The plants should be kept uniformly moist.

Watering.—Much less watering all round will now be required. Plants that are developing their inflorescences must have sufficient for that purpose, but much less will be required when they have done flowering. The tissue of the pseudobulbs made during the summer will now be getting hard and woody, and will withstand more dryness at the root without shrivelling than it could have done some time ago. Even plants that are growing, such as Odontoglossum crispum, Lælia harpophylla, and others should be allowed to dry out well before having a fresh supply.

Temperatures.—The temperatures given last month will be found a safe guide for this. Much more fire-heat will now naturally be necessary, but every advantage must be taken of the sun. Before October is out shading should be entirely dispensed with; a little extra ventilation, to prevent any danger of scalding, will be better than having the blinds down with the ventilators closed. But guard against cold winds.

The phenomenal heat with which August went out and September came in cannot be without its effect on Orchids. Following such a long spell of dry, sunny weather, and at a time when many plants had finished up their pseudobulbs, the result may be that some will be irritated into re-starting into growth. Where this has happened—and in the most normal of seasons it always does to some extent happen—I think it is best not to insist upon the growth coming along quickly, by giving extra warmth and water, but to treat such plants in exactly the same way as those which have not re-started. In some cases these premature breaks will grow and finish up in a very short time, while in others they grow slowly, and sometimes finish up quite small. Dendrobiums and Cattleyas are the two classes which are most liable to do this, but little if any harm ensues if they are not coddled in extra warmth.

Washing the Foliage of Orchids.—Growers of plants know that cleanliness is of the utmost importance to successful cultivation, and now that most Orchids have finished their season's growth the work of cleaning them should be proceeded with. All plants that have the foliage dirty should be washed, but I am not a believer in washing for washing's sake, or to keep men employed. Where there has been, or is, any kind of insect pest—seale, red spider, mealy bug, green fly, ants—careful cleaning must be done. Foliage may also become dirty through exudation from flower buds, syringing with chalky water, &c., when it will be necessary to clean

the pores of the leaves, so that they may be able to properly carry on their functions; but clean leaves need not be washed. For instance, the bulb and leaf just finished should not require washing. Wash the plants that are dirty or infected by insects, but not those that are already clean. While disliking dirty foliage, I also dislike the unnatural polish that follows a good rub up. I should not recommend the washing of the foliage of Odontoglossum crispum—a comprehensive wash, I mean—for I am sure that a good many yellow leaves would follow.

POT SCRUBBING.—I honestly do not think that it matters much to the plant whether the pots are scrubbed or not, but clean pots look smart. and if there is time to keep them clean, do it. The best grown collection of Odontoglossums—on consideration, let me say one of the best—I have ever seen had the pots smothered in what looked like seaweed, so green were they, and the grower believed in it. It is difficult to gainsay evidence of this kind, although it is easy to say that the plants were doing well for other reasons, and in spite of this. I once knew a lady who owned a greenhouse full of hardy ferns, and had an old gardener. This lady once read a primer on gardening, from which she gleaned that plants breathed through the pots, or something to that effect, and had her pots kept scrupulously clean ever afterwards. The old gardener washed them once a week—every Saturday. But her ferns did not grow any better than other people's, if as well, and the old gardener said worse—only, perhaps. owing to the weekly wash, he might have been prejudiced. This lady evidently had little power of observation, or she would have discovered that her excessive pot scrubbing was being badly rewarded, and it seemed almost unkind, after the primer, that other people's ferns did grow, although the pots were sometimes dirty. If Mr. Crawshay's glass pots have not taught us anything else, they show that porosity in an Odontoglossum receptacle is not indispensable.

CYPRIPEDES AS TOWN PLANTS.—It has frequently been remarked that Cypripedes are good town plants, and a correspondent in the Manchester district writes:—"I have a small collection of Cypripedes and Odontos. but the Cypripedes stand our dirty damp climate best. The Odonto blooms come slightly smaller each time. I am at business all day, and my plants have to rough it, so perhaps that explains it, but the Cypripedes bloom away as if they liked it." These shade-loving Orchids are probably less affected by dull weather and fog than most others, and we have seen the flowers of Dendrobium Phalænopsis spoilt by a single night's fog when Cypripedes were untouched. The experience of amateurs on this point would be acceptable.

CYNORCHIS PURPURASCENS.

DECIDUOUS ORCHIDS are not as a rule grown with great success, probably on account of the difficulty often experienced in resting them. There are, however, a few notable exceptions, and Cynorchis purpurascens is one of them, and a very handsome one, too. The Kew plants, which were intro-

FIG. 41. CYNORCHIS PURPURASCENS.

duced six years ago from Madagascar, by M. Warpur, continue to thrive and flower annually, and the annexed figure represents a pan of three good plants, and is reproduced from a photograph taken by Mr. C. P. Raffill, which, of course, represents them greatly reduced in size. Each plant produces a single large spreading leaf, as shown, and an erect head of

beautiful purple flowers, with a white blotch on the disc of the strongly four-lobed lip. Well developed heads measure five and six inches across, and in 1901 one plant developed a leaf seventeen inches long by over six inches broad. The history of the species has already been given (*O.R.* ix., p. 20), and a figure has appeared in the *Botanical Magazine* (t. 7852). M. Warpur states that the species generally grows on the prostrate stems of species of Pandanus, near the riverside, in the high forest, at an altitude of 1,000 to 2,000 feet, though sometimes it is found in tufts of Asplenium Nidus, on large trees, at a considerable height above the forest floor. It succeeds in an intermediate temperature, when grown in shallow pans, in a mixture of rough peat and sphagnum moss. Although the leaves are deciduous, M. Warpur states that the plant is never in a state of complete rest, for as soon as the old leaf and spike are open the rhizome begins to push forth new shoots, so that it should never be dried off. It should be well shaded until the leaves are fully developed, when a little more light and less water should be given. Under such treatment it is easily grown, and is a very distinct and beautiful decorative plant.

CYPRIPEDIUM CALCEOLUS IN BRITAIN.

THE *Strand Magazine* for September contains an interesting illustrated article by W. Carter Platts, entitled "Hunting the Slipper: The Rarest British Wild Flower." The author remarks that vaguely and in a general way, this largest and scarcest of British Orchids is understood to still survive upon the hillsides of a remote corner of Yorkshire dale-land—to wit, in Upper Wharfedale—where, amid the wild tangle of lilies, primroses, arums and garlic, it hides its charms in the upland thickets of hazel scrub, stunted sycamore, and mountain ash which cling for life to the precipitous slopes of the savage fells, and here year after year the elusive slipper has been sought for with undiminished zest, though generally without success. Some time ago a young man came to reside in the district indicated, and while rambling in the woods gathering wild flowers found what he termed, for lack of better knowledge, a "wild calceolaria." A friend to whom he showed it told him what it was, and for twenty years he has doggedly searched for another specimen, but without success. A few years later someone else found a plant on the same hillside and transferred it to his garden, where it has since bloomed with gratifying regularity. In 1889 it was found blooming within the shadow of Penyghent, and a year later it was found in another direction. A lady meeting with a strange plant gathered a leaf and sent it to a well-known north country botanist, who identified it as the Cypripedium in question. An expedition was organised and started in search of the plant, but, alas, the lady's instinct of locality

was not equal to the intricacy of the mazy thickets, and a prolonged bout of hunting the slipper was not rewarded with success. This year a little Wharfedale maiden, searching the woods for lilies, came upon a fine cluster, consisting of no fewer than eight stems. Fortunately she was able to retrace her steps to the spot, and the author was able to secure photographs, the first, it is believed, of the plant blooming in its native wilds. Four of these accompany the article, including one of the plant in its native surroundings, where it is by no means conspicuous.

We can also state that the plant has recently been discovered in another Yorkshire locality, and we have seen both a photograph and a dried specimen. The wild station, Castle Eden Dene, in Durham, whence also we have seen specimens, is carefully preserved, and not accessible to the general public, and we hope that the Yorkshire stations may be equally well looked after.

PAPHIOPEDILUM FAIRRIEANUM.

A little over a year ago the first flowers of the re-introduced Paphiopedilum Fairrieanum were produced at Kew, and were figured in this work (vol. xiii. p. 265), and the antecedent history of the species naturally raised the question whether we should now succeed in its culture. The Kew plants have progressed satisfactorily, and this year are producing a good crop of flowers, for we counted fifteen in one of the houses the other day, and one plant we noticed had a much shorter scape than the others, while there was some difference in the breadth of purple veining in different plants. Until now we have not had an opportunity of seeing the amount of variability in the species, and we hope to receive information of anything unusual that may be observed, also of varying degrees of success in its culture under different treatment. The idea that it cannot be grown is now quite dispelled, and its value for hybridising should secure it a permanent place in our collections. The species has a reputation in this respect, and it will be interesting to watch the course of events now that abundant pollen is available. By the way, the Kew plants have matured capsules without injury, so that another story passes into the realms of the legendary, and now that the species is again common in gardens there seems to be no particular reason why it should not be used as a seed parent.—Ed.

We have three of the newly-imported Cypripedium Fairrieanum flowering, and it is extremely interesting to see the variation in them. One is a noble flower with a dorsal sepal an inch and three-quarters high and the same across, and several experts have pronounced it to be the finest in size

they have ever yet seen. Another is considerably smaller but very heavily reticulated with dark purple lines, forming in colour a striking contrast to the first-named one ; whilst the third exhibits some rather odd peculiarities. The petals of this one have altogether lost the beautiful curve which distinguishes this plant, and are at right-angles to the flower and a little recurved. Further, the lower or inferior sepal is nearly uniform in size and colour with the upper one. One feels desirous of knowing whether this is really singular, or whether there are a fair proportion somewhat similar. Will it be too much to expect a pure albino of this species ?

RICHARD ASHWORTH.

Ashlands, Newchurch.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of the R.H.S. was held at the Royal Horticultural Hall, Vincent Square, Westminster, on September 11th, when the display of Orchids was much smaller than usual, and the awards consisted of three medals, three Awards of Merit, and one Botanical Certificate.

H. S. Goodson, Esq., Fairlawn, West Hill, Putney (gr. Mr. Day), staged a fine and well-arranged group, which obtained a Silver Flora Medal. Lælio-cattleya × bletchleyensis was well represented by several fine forms at one end of the group, while at the other, some Cattleya × Iris made a fine display. Among other Lælio-cattleyas may be mentioned some good L.-c. elegans, L.-c. Parysatis, and L.-c. Massangeana Harry Goodson. At the back of the group, well arranged with Palms, were some handsome Oncidium varicosum. We also noted an example of the rare Dendrobium Williamsianum, having white sepals and petals with a violet lip, Brassia brachiata, Miltonia × Bleuana, Odontoglossum crispum, and other good things.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), obtained an Award of Merit for Lælio-cattleya woodfordiensis (L. crispa × L.-c. C. G. Rœbling), a finely grown plant with two spikes, having the sepals and petals white, tinged with rose, and the front of the lip ruby-purple, with a lavender margin.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), received an Award of Merit for Lælio-cattleya Sunset (L. Jongheana × C. Percivaliana), a handsome hybrid, most like the Cattleya parent in shape, having the sepals and petals broad and flat, tinged with pale lilac, and veined with a darker lilac, and the lip bright orange, with a small dark bronze-red blotch, and several short lines radiating from the centre, while the margin is undulate and white, tinged with pale rose.

F. Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), showed the

large and handsome Brassocattleya Mrs. Francis Wellesley, Lælio-cattleya Duvaliana, Westfield var., and L.-c. Mrs. de Vere Beauclerk (L.-c. Ingrami × C. Trianæ) a very handsome and shapely hybrid, with broad segments, to which latter an Award of Merit was deservedly given. The sepals and petals are white, tinged and slightly veined with rosy lilac, the disc of the lip dark orange, with minute reddish brown spots and lines at the base, and the front lobe claret-purple, with dark radiating lines.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), showed the remarkable Polystachya grandiflora, from West Tropical Africa, a Botanical Certificate being awarded. In this species the flowers are carried on vertical spikes, and are about 1½ inches long, waxy in texture, pale green, tinged with purple, and with some purple markings on the lip. The flowers are produced in succession, and are the largest in the genus.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. W. P. Bound), showed Cattleya × Farquharsoniana, a handsome hybrid between C. bicolor and C. × Iris (bicolor × Dowiana aurea), having the size and shape of C. bicolor, but with the bright colouring of C. × Iris, the sepals and petals being light purple-brown, and the lip purple-crimson, with a narrow white margin.

Messrs. Charlesworth & Co., Heaton, Bradford, gained a Silver Flora Medal for a very fine and well-arranged group, containing as a central feature twenty-five handsome plants of Cattleya × Iris, showing remarkable variation in the colouring of the flowers, no two being alike. Other interesting things were Cattleya × Vulcan, C. × Germania, Brassocattleya heatonensis, B.-c. Madame Chas. Maron, Lælio-cattleya illustris, L.-c. Alcyone, L.-c. Dominiana, Brassocatlælia elegans-Digbyana, Trichopilia Turialvæ, Anguloa eburnea, Mormodes pardinum unicolor, various Cypripediums, Odontoglossums, and other plants.

Messrs. Sander & Sons, St. Albans, staged an extensive and handsome group, to which a Silver Flora Medal was awarded. It contained some excellent forms of Lælio-cattleya elegans, L.-c. bletchleyensis, L.-c. Ingrami splendens, with its very fine dark maroon-purple lip, L.-c. callistoglossa, Cattleya × Mrs. J. W. Whiteley, C. × Pittiana, C. × Lord Rothschild, a fine example of the rare Lælia monophylla with over a dozen orange flowers, Cycnoches ventricosum with a raceme of six flowers, Stanhopea Wardii, Pholidota conchoidea, P. articulata, Cypripedium Fairrieanum, and various others.

Messrs. Hugh Low, & Co., Bush Hill Park, Enfield, exhibited an excellent group, which included Lælia purpurata Duckworthii, almost an albino, the white flowers having only a veining of purple on the lip, Cattleya Gaskelliana alba, C. × Minucia, C. × St. Gilles, C. × Iris, C. Leopoldi, C. Loddigesii albens, Cypripedium Lawrenceanum Hyeanum, C.

× Youngiano-superbiens, Oncidium incurvum, O. microchilum, O varicosum, a form of O. Forbesii with sparsely spotted yellow lip. Odontoglossum bictoniense album, and other good things.

A second meeting was held on September 25th, when Orchids formed a leading feature of the exhibits, and the awards consisted of three medals. six Awards of Merit, and one Botanical Certificate.

E. Ashworth, Esq., Harefield Hall, Wimslow, Cheshire (gr. Mr. Holbrook), sent the very interesting Dendrobium × Arthur Ashworth (D. Brymerianum × Dalhousieanum) which received an Award of Merit. It was most like the latter in shape, but had yellow flowers, and the lip somewhat fringed, and bearing a pair of light purple blotches at the base. A Botanical Certificate was also given to the very rare Trevoria chloris. a very remarkable plant, whose history was given at page 203 of our fifth volume. It is allied to Stanhopea, and has drooping racemes of greenish fragrant flowers.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), showed Cattleya × Lord Rothschild superba, very large and handsome, Lælio-cattleya Novelty superba, L.-c. Tunis (L. cinnabrosa × C. Warscewiczii), having the sepals and petals white, tinted with salmon-colour, and the lip purple, and the handsome L.-c. Berthe Fournier, Holford's var. (L.-c. elegans × C. Dowiana), which gained an Award of Merit. The sepals and petals were a deep copper-red, and the lip ruby-crimson with golden veining at the base.

The Marquis de Wavrin, Chateau de Ronsele, Belgium (gr. M. de Geest), exhibited Cattleya Hardyana var. Rex, a very fine dark form, which gained an Award of Merit. The flowers had rich rose-coloured sepals and petals, and a deep ruby-claret lip, lined with gold at the base.

W. M. Appleton, Esq., Weston-super-mare (gr. Mr. Brooks), showed Cypripedium × Francis Heygate, C. × Redvers Buller, C. × Rolfei, Zygopetalum maxillare, and Cattleya × Appletonæ (elongata × aurea), forming a very interesting little group.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), exhibited the singular Epicattleya Figaro (E. falcatum × C. intermedia), having very fleshy leaves, narrowly lanceolate green sepals and petals, the lip trilobed, white, with faint rose lines on the side lobes, and the throat tinged with yellow. He also showed Cypripedium × Princess, var. Wellesleyanum (Mons. Coffinet × Fairrieanum), a light-coloured form of the beautiful hybrid figured at page 113.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a particularly fine group, which was awarded a Silver-gilt Flora Medal. It included several fine Brassavola Digbyana hybrids, the handsome Brassocattleya

Madame Chas. Maron being represented by several examples. There were also some good Cattleya × Iris, C. × Leda (Dowiana aurea × superba), Sophrolælia heatonensis, the large and handsome Zygopetalum maxillare magnificum, with fine violet lip, Vanda insignis, Cirrhopetalum appendiculatum, Odontoglossum × Phædra (Hallii × Pescatorei), resembling the latter in shape, and the colour white, blotched with reddish brown, and the handsome O. × Smithii (Rossii rubescens × crispo-Harryanum), which was figured at page 9. The flowers are white, with a broad purple border to the sepals and petals, these being heavily blotched with chocolate-purple, while the front of the lip is rose-purple. An Award of Merit was given to Odontioda Bohnhoffiæ (Cochlioda vulcanica × Odontoglossum cirrhosum), a new and very pretty hybrid bearing one spike of flowers with narrow segments blood-red in colour, with some white showing in places, and slightly tinged with purple at the base of the sepals and petals. The crest of the lip is yellow, with some red spots.

Messrs. Sander and Sons, St. Albans, staged an excellent group, which was awarded a Silver Flora Medal. It included some fine specimens of Vanda Kimballiana, Cycnoches chlorochilon, varieties of Cattleya × Iris inversa, C. Gaskelliana alba, Cypripedium × Andronicus, C. × Sir Redvers Buller, C. × Olga Bagshaw, and C. × Victory (Euryale Sander's variety × triumphans), the last-named receiving an Award of Merit. This was a very fine hybrid, most resembling C. × triumphans in colour, the lower sepal being large and circular, and the broad dorsal sepal green, heavily blotched with dark chocolate in the centre, and bearing feathered rosy lines inside the broad white margin, the petals broad, tinged with purple and spotted with black on the inner halves, and the lip tinged with red-purple.

Messrs. J. Cypher and Sons, Cheltenham, were awarded a Silver Banksian Medal for a good group, containing Cypripedium × Milo Westonbirt var., C. × triumphans Westonbirt var., C. insigne W. P. Bound, C. × callo-Rothschildianum, C. × Phœbe (philippinense × bellatulum), having a pure white ground, dotted with purple lines, giving a very pretty effect; some fine varieties of Dendrobium Phalænopsis, Oncidium varicosum Rogersii, Lælio-cattleya Berthe Fournier, Brassocattleya Madame Chas. Maron, Cattleya × Iris, C. × Hardyana Massaiana, C. × Brownii, and others.

Messrs. Hugh Low and Co., Bush Hill Park, sent Cattleya × Ariadne (dolosa × labiata), and Cypripedium × Fletcherianum (Godefroya leucochilum × Lord Derby), the latter receiving an Award of Merit. This was an excellent hybrid, with a two-flowered scape, the ground colour being cream-yellow with broad blotched lines of dark chocolate, and the lip pale yellow, slightly spotted with purple on the face.

Messrs. Linden and Co., Brussels, sent a flower of Odontoglossum crispum illustratum, said to be from O. c. Vinicius × O. c. Perfection. It is a very handsome thing, the greater part of the sepals and petals of which was blotched with rose purple.

Mr. H. Schuster, Brussels, showed a small group of hybrids, containing Lælio-cattleya bellula (pumila × maxima), Cattleya × Vulcani var. Elisabethæ, C. × Fallieri (Rex × Trianæ), C. × Capartiana (Rex × Warscewiczii), and the very fine C. × Le Czar var. fortissima (granulosa Dubuyssoniana × labiata), a light rose-tinted flower, with rose-purple front lobe to the lip, which was very broad.

DIPLOMA AWARDS.

The following Awards were made in the special competition on this date:—

CYPRIPEDIUM ROTHSCHILDIANUM HYBRIDS.—First Diploma to Cypripedium × Fletcherianum, from Messrs. Hugh Low and Co. Second Diploma to C. × A. de Lairesse, Westfield var., from Francis Wellesley, Esq.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Royal Botanical Gardens, Old Trafford, on September 7th, when the display of Orchids was not large, though a number of choice things were staged. The following members of the Committee were present:—E. Ashworth (Chairman), W. Duckworth, Z. A. Ward, J. E. Williamson, H. Smith, W. Stevens, H. Thorp, C. Parker, A. J. Keeling, F. W. Ashton, E. Rogers, J. C. Cowan, and P. Weathers.

E. Bostock, Esq., Stone, Staff., received a First-class Certificate for Cypripedium niveum Bostock's var., a particularly fine form, and an Award of Merit for Cypripedium Charlesworthii Holly House var.

N. J. Bromilow, Esq., Rainhill, received a First-class Certificate for Cattleya × Iris var. Marjorie, and an Award of Merit for C. × Iris var. Mrs. James Bromilow.

W. Thompson, Esq., Stone (gr. Mr. Stevens), received Awards of Merit for Cypripedium × l'Ansoni inversum, and for a new hybrid Odontoglossum, obtained from O. Harryanum and O. luteopurpureum var. Vuylstekeanum.

Dr. Hodgkinson, The Grange, Wilmslow (gr. Mr. Woore), exhibited a plant of the rare Zygopetalum × Roeblingianum, and a good form of Cattleya × Iris.

E. Rogerson, Esq., Didsbury (gr. Mr. Price), exhibited Cypripedium × Mrs. G. Fletcher.

STANHOPEA EBURNEA.

It is unfortunate that the flowers of the genus Stanhopea are so fugacious, for many of them are very handsome, while few Orchids are more remarkable in structure. Their habit is also peculiar, for the pendulous spikes almost necessitate their being grown in shallow baskets, through which they can push, and it is curious to see a cluster of such large and remarkable flowers hanging beneath the receptacle in which they are grown, without any apparent connection with the plant above. That they are epiphytes

Fig. 42. STANHOPEA EBURNEA.

goes without saying, and their habit of suspending the spikes beneath the branches of the trees on which they grow has become so confirmed that they are no longer able to grow any other way. In some cases, however, the spikes come through the sides of the basket, as in the one now figured, which takes its name of Stanhopea eburnea from its ivory white flowers. It has been known for a long time in cultivation, having been described by Lindley in 1832, from a plant which flowered in the collection of James

Bateman, Esq., of Knypersley, and which had been introduced by Messrs. Loddiges from Rio de Janeiro. Four years previously a plant which had been introduced from Trinidad, by Sir R. Woodford, was figured by Messrs. Loddiges, under the name of Ceratochilus grandiflorus, which subsequently became Stanhopea grandiflora, Lindl., though it is now regarded as a form of the same species, which is widely diffused, having been collected in Trinidad, British Guiana, Brazil, Venezuela, Colombia and Peru.

All the species are of easy culture, succeeding in a moderately shady position in the Cattleya or East Indian house, in a mixture of fibrous peat and sphagnum moss. They require plenty of water during the growing season, after which the supply should be gradually reduced, so as to give them a good rest during the winter. Strong, well-grown plants are remarkably floriferous.

OBITUARY.

G. W. LAW-SCHOFIELD.—We much regret to hear of the death of this enthusiastic and highly esteemed Orchidist, which took place at his residence, New Hall Hey, Rawtenstall, near Manchester, on September 1st. For many years he has been one of the leading growers of the Manchester district, and as long ago as 1882 Cattleya Schofieldiana was named in his honour, by Reichenbach (*Gard. Chron.*, 1882, ii. p. 808). It flowered in his collection in October of that year, and is now considered to be a spotted form of C. granulosa. The deceased has been in declining health for two or three years, and some time ago he described his recovery from a former attack as almost a miracle. Many fine things from his collection have appeared at meetings of the R.H.S., in London, and he was a member of the Orchid Committee of that body as late as 1903. He took part in the organisation of the Manchester and North of England Orchid Society, on April 23rd, 1894, and was a member of the Committee from the commencement, and took the greatest interest in it up to the last. At his funeral, on Wednesday, September 5th, a beautiful floral cross was sent by the members, made of Orchid flowers from their own collections, the Society being also officially represented by the Chairman and Secretary. He also took a great interest in the *Orchid Review*, of which he has been a supporter from the commencement, and only last June the handsome Odontoglossum crispum var. G. W. Law-Schofield was illustrated (p. 184) from his collection. Another beautiful plant which bears his name is Cypripedium × Schofieldianum, a hybrid from C. bellatulum ♀ and C. hirsutissumum ♂, which received an Award of Merit from the R.H.S. on April 21st, 1896, and was illustrated in the *Journal of Horticulture* (1896, ii. p. 101, fig. 19).

TOWNSONIA DEFLEXA: A NEW GENUS OF ORCHIDS.

In the recently issued *Manual of the New Zealand Flora* (pp. 691, 692), Mr. Cheeseman, publishes a new genus of Orchids, under the name of Townsonia deflexa, which was collected in the vicinity of Westport, near Nelson, in the South Island of New Zealand, flowering in November and December. He remarks that it is a very curious little plant, clearly allied to Adenochilus, of which it has the habit, but it differs in the smooth undivided lip, minute petals, and in the column wings not being produced upwards behind the anther. The smooth undivided lip also separates it from Chiloglottis, Caladenia, Burnettia, and other allied genera. "Believing it to form the type of a new genus," he adds, "I have much pleasure in dedicating it to its discoverer, Mr. W. Townson, of Westport, to whom I am much indebted for specimens and information respecting the botany of the north-western portion of the South Island. It is a slender creeping plant, bearing a single radical petiolate leaf, with roundish blade, and a solitary or 2-flowered scape, three to six inches high, and greenish flowers.

I believe it to be identical with an Orchid collected on Stewart Island by Mr. T. Kirk, F.L.S., in January, 1884. He remarks (*Trans. N. Zeal. Inst.*, xvii. p. 224) :—"Two specimens of a small Orchid were obtained on the descent from Mount Anglem. It seems probable that they will form the type of a new genus closely allied to Burnettia and Chiloglottis." One of these specimens was forwarded to Kew at the time, and was examined by Sir Joseph Hooker, who thought it to be a new genus near Chiloglottis, but nothing further was done with it, and no further examples appear to have been met with. This specimen has all the characters mentioned by Mr. Cheeseman, and as Stewart Island is situated at the southern extremity of the South Island, a considerable distance away from Westport, it is likely that it exists elsewhere. It is not a conspicuous plant, and would easily be overlooked.

It may be added that Mr. Cheeseman enumerates fifty-five species of New Zealand Orchids, belonging to twenty-one genera, of which Townsonia alone is endemic.

R. A. Rolfe.

ORCHIDS IN THEIR NATIVE HABITATS.

Why don't you urge upon subscribers living in tropical countries to contribute occasional notes regarding the plants as found in their native habitat? It seems to me such accounts are most interesting: whether others so regard it I do not know.

J. C. Harvey.

Vera Cruz, Mexico.

ORCHIDS IN SEASON.

THREE very beautiful Orchids are sent from the collection of W. Waters Butler, Esq., Southfield, Edgbaston, Birmingham. First may be mentioned a flower of Cattleya Trianæ flowering out of season. It was purchased about six weeks ago as an imported plant, with one sheath and four almost dormant eyes, and was at once potted. The sheath has now produced two flowers. It is of good shape, with pale lilac pink sepals and petals, and the front of the lip rich amethyst purple, which colour extends round the undulate margin of the side lobes, becoming gradually paler, while the throat is rich yellow margined with cream. The second is a form of the beautiful C. × Iris, having bronzy sepals and petals, and the lip of the richest amethyst. The third is a good Lælio-cattleya × bletchleyensis. having lilac pink sepals and petals, and a dark purple lip, with a pair of small yellow eyes in the throat.

An inflorescence of Aërides suavissimum (A. Reichenbachianum) is sent from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, by Mr. Smith. It is closely allied to A. odoratum, but has light buff sepals and petals. Like its ally, it is powerfully fragrant, and in each case the character has been incorporated with the specific name. A flower of the handsome Cypripedium × Unixia superbum (Harrisianum × Lawrebel) is also sent, being good both in shape and colour.

A very fine form of Lælio-cattleya Gottoiana is sent from the collection of Mrs. Fielden, Grimston Park, Tadcaster, by Mr. Clayton, who remarks that the inflorescence bore four flowers. The sepals and petals are 4½ inches long, and light rosy purple in colour, and the front of the lip brighter purple, with numerous radiating deep amethyst veins, and the tube deep yellow, the latter being a somewhat uncommon character in this fine natural hybrid, whose parents are Lælia tenebrosa and Cattleya Warneri.

HYBRIDIST.

CATTLEYA × FARQUHARSONIANA.—A pretty little hybrid, derived from Cattleya bicolor and C. × Iris, has been sent from the collection of Jeremiah Colman, Esq., Gatton Park, Reigate, by Mr. Bound, who remarks that it is the first hybrid from C. × Iris. As the latter was derived from C. bicolor and C. Dowiana, it will be noticed that the novelty consists of three parts bicolor and one part Dowiana, hence one is not surprised to find a considerable return to C. bicolor, in the smaller size, and narrower more fleshy segments. It is most comparable to a well-coloured C. bicolor, but is probably undeveloped at present.

ORCHIDS IN NEW ZEALAND.

There are now several readers of the *Orchid Review* in New Zealand. Recently one of them expressed surprise that Orchid importers and growers in England did not more frequently utilise its columns to make known plants they have for sale, and most important, their prices. The result of their not doing this is that New Zealand Orchid growers, as well as some Australian growers, are buying from the Continent, from America and from India, not necessarily because prices are better, but because fullest information is volunteered. It would, in fact, be much more convenient to purchase from England, the Orchid centre, simply because all species could be obtained in the one importation, whereas at present some are got from India, some from Europe and some from America. The reasonableness of my contention is apparent when I tell you that the minimum shipping freight out here, for ever so small a case, is 40s. Other charges often run this up to 70s. One large case from England containing all varieties required would cost less and obviate a lot of trouble.

Collections here are very small indeed; I have not more than 3,000 plants. I have now in bloom—mid-winter—some very fine Dendrobium nobile, ranging in colour from nearly white to deep purple. I have one, a bright crimson purple, and another that is cream, or rather an ivory white tipped in the ordinary way.

Every issue of the *Review* is indeed welcome. The contributions therein are exceedingly interesting and instructive.

If short letters concerning Orchids and their culture in New Zealand would be of any interest for the *Review* I shall be pleased to furnish them.

D. Papworth.

ODONTOGLOSSUM × CALIGINOSUM.

On July 17th, a handsome Odontoglossum was exhibited before the R.H.S. by Messrs. Duchesne, Lanthorne and Co., Watermael, Brussels, under the above name, which the Orchid Committee amended to O. × Vuylstekei, and as such we recorded it, with the desire of ignoring what was considered to be an unnecessary synonym. But that does not end the matter. The *Tribune Horticole* (p. 30) records that on July 15th it was exhibited by M. Ch. Vuylsteke, at Brussels, as a hybrid between Oncidium Weltoni and Odontoglossum Pescatorei, and was awarded a Diploma of Honour. A later note (p. 48) explains that it was purchased by Messrs. Duchesne, Lanthorne and Co., who exhibited it in London two days later as a hybrid between O. cristatum and O. Pescatorei. This parentage was given by the *Gardener's Chronicle* (1906, ii. p. 56) in recording the decision of the Orchid Committee. A third note appears in the *Tribune Horticole* (p. 56) to the

effect that M. E. Praet believes the parentage to be O. luteopurpureum or O. sceptrum and O. crispum, and he regards it as a form of O. × mirificum, raised by M. Vuylsteke. We hope the history is now cleared up, and should like to see a flower next year.

VARIATION IN HYBRIDS.

SOME little time ago I wrote you about a Brassocattleya Orpheus which varied extremely in its colouring according to the size of its bulb (See page 134). I am now greatly interested in a plant which I bought in 1904, because I admired the flower so much. I think it was said to be Lælio-cattleya Aphrodite. Its bulbs were all similar in shape, short and stout, rather egg-like. Last year it did not flower. This year it is just beginning to make up a bulb of a Lælia purpurata character, and I am very curious to see whether the character of the flowers will be entirely different too. I am rather afraid that it will be—very interesting, if it is, but I bought the plant because I specially admired the flower, which was of the Cattleya Mendelii type, but beautifully coloured. I should prefer that it flowered true.

I find that the last flowering bulb was 3 inches long, and the leaf 8 inches, 11 inches in all. The new bulb is 8 inches to the base of the sheath, and the leaf 11½ inches, 19½ inches in all, and the bulb is only just beginning to swell down in the sheath.

JOHN EDWARDS-MOSS.

Thamesfield, Henley-on-Thames.

EPIDENDRUM VITELLINUM AS A PARENT.

A THREE-flowered inflorescence of a bright and attractive hybrid is sent from the establishment of M. Paul Wolter, of Magdeburg. It is said to have been derived from Cattleya Loddigesii × Epidendrum vitellinum, and several plants were raised, which have slender stems like the seed parent, with a pair of rather larger leaves. It is also remarked that one cannot see the distinct influence of the Epidendrum, which was also the case in Epicattleya magdeburgensis (C. Gaskelliana × E. vitellinum). A similar remark applies to the flowers, though some modifying influence has been at work. They are bright rose-purple in colour, with a whitish throat, and are about as large as the Cattleya in size. The hybrid has not at present been named. There is something rather mysterious about these crosses with Epidendrum vitellinum, for M. Wolter states that he has often tried to cross this plant with various Cattleyas and Lælias, but always without success, as the flowers were never fertilised.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent Square, Westminster, during October, on the 9th and 23rd, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. There will be a special Diploma competition on the latter date, the subjects selected being Lælia pumila, L. Dayana, Cattleya Dowiana and C. Dowiana aurea, with their hybrids.

Two meetings of the Manchester and North of England Orchid Society will also be held, at the Coal Exchange, Manchester, the dates being October 11th and 25th. The Orchid Committee meets at noon, and the exhibits are open to inspection from 1 to 3 p.m.

The plant of Eulophiella Peetersiana in the Royal Botanic Garden, Glasnevin, appears to be in fine condition. Mr. Watson, who has recently paid a visit there, describes it, in a recent issue of the *Kew Bulletin* (p. 220) as "a giant with leaves four feet long and six inches across."

The August issue of M. Goossens' *Dictionnaire Iconographique des Orchidées*, just received, contains portraits of the following Orchids :— Cattleya × lucida, Cymbidium insigne, Cypripedium × Madame A. Bleu, C. × Phœbe, Dendrobium Ashworthiæ, D. crepidatum, Epidendrum glumibracteum, Eulophia guineensis var. purpurata, Lælia majalis, Listrostachys pellucida, Odontoglossum Insleayi, O. × Lambeauianum, and Oncidium suave.

A pretty form of Lælio-cattleya Antigone is sent from the collection of J. H. Grogan, Esq., Slaney Park, Baltinglass, Co. Wicklow. It is a seedling raised in the collection from Lælia purpurata Russelliana × Cattleya Schilleriana. The petals are light purple, also the margins of the sepals, the central part being pale green, while the lip is very dark rich purple, with numerous radiating light yellow lines on the side lobes. The shape of the lip closely resembles the pollen parent, and except in this character there is a general resemblance to Lælio-cattleya elegans. Mr. Grogan remarks that if a dark form of L. purpurata had been used the result should have been very good.

ORCHID PORTRAITS.

Angræcum Arnoldianum, De Wild.—*Trib. Hort.* i. p. 83, t. 6. A synonym of A. Eichlerianum, Kränzl.

Angræcum caudatum.—*Orchis*, i. p. 21, fig. 11.

Bifrenaria Fuerstenbergiana, Schlechter.—*Orchis*, i. p. 25, fig. 12.

BRASSOLÆLIA EDWARD VII.—*Orchis*, i. p. 37, t. 5.

CATASETUM GALERITUM VAR. PACHYGLOSSUM, Rchb. f.—*Bot. Mag.*, t. 8093.

CATTLEYA ACLANDIÆ.—*Journ. Hort.* 1906, ii. p. 243, with fig.

CATTLEYA LABIATA TRIANÆ BACKHOUSEANA.—*Orchis*, i. p. 3, t. 1.

CATTLEYA MENDELII VAR. FRAU LINA ABEKEN.—*Trib. Hort.* i. p. 4, t. 1.

CATTLEYA SKINNERI.—*Orchis*, i. p. 20, fig. 10.

CYMBIDIUM LOWIANUM (monstrous).—*Orchis*, p. 35, figs. 16, 17.

EPIDENDRUM ADENOCARPUM.—*Gartenwelt*, 1906, p. 608, with fig.

LÆLIA ANCEPS WILLIAMSII.—*Orchis*, i. p. 19, t. 3.

LÆLIA PUMILA VAR. PRÆSTANS.—*Journ. Hort.* 1906, ii. p. 219, with fig.

LÆLIO-CATTLEYA MRS. DE VERE BEAUCLERK.—*Journ. Hort.* 1906, ii. p. 291, with fig.

MAXILLARIA BINOTI, De Wild.—*Orchis*, i. p. 25, fig. 13.

ONCIDIUM × STANLEYI.—*Gard. Mag.* 1906, 599, with fig.: *Journ. Hort.* 1906, ii. p. 267, with fig.

ONCIDIUM TIGRINUM VAR. SPLENDIDUM.—*Orchis*, i. p. 13, t. 2.

PHALÆNOPSIS AMABILIS RIMESTADIANA ALBA.—*Orchis*, i. p. 21, t. 4.

SOBRALIA MACRANTHA.—*Orchis*, i. pp. 30, 31, fig. 14, 15.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired (abroad, reply postcards should be used). Subjects of special interest will be* ***dealt with in the body of the work***].

T. L. M. Flowers and photographs received with thanks. We will reply shortly.

J. S. Restrepia sanguinea, Rolfe.

A. C. Yes, the flower is Stanhopea Wardii, but it is impossible to say how it got the name of S. eburnea, a plant figured at page 313 of our present issue.

H. H Please date your letters.

J. H. G. The flower purchased as imported O. Harryanum is O. luteopurpureum, but whether this can be taken as evidence that the two grow together is very uncertain. We should be glad to receive any further evidence on this point.

LÆLIO-CATTLEYA LUCASI.—Mr. Crawshay writes that the hybrid between Lælia × Iona and Cattleya Warscewiczii, recorded at page 276 as Lælio-cattleya Lucasi, was not so named by Mr. Lucas, though some unauthorised person put this name on it. It has since been named L.-c. George Branch.

J. E. M. Clearly a Cattleya granulosa hybrid, as is evident from the shape of the lip and the shape and texture of the petals shows that the second parent was a species of the labiata group, though we fail to identity it further. Is it not possible to obtain the record of parentage?

D.P. Yes, notes concerning Orchids and their culture in New Zealand would certainly be of interest.

J. H. A very fine form of Cypripedium Charlesworthii, but we have still larger forms in England. We could not undertake to dispose of it, but you might advertise it.

Photographs received with thanks.—W. P. B., T. L. M.

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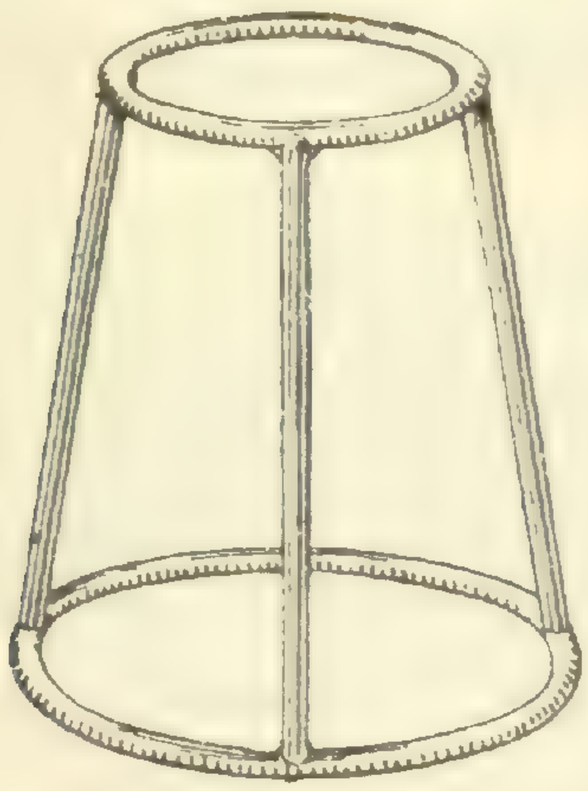

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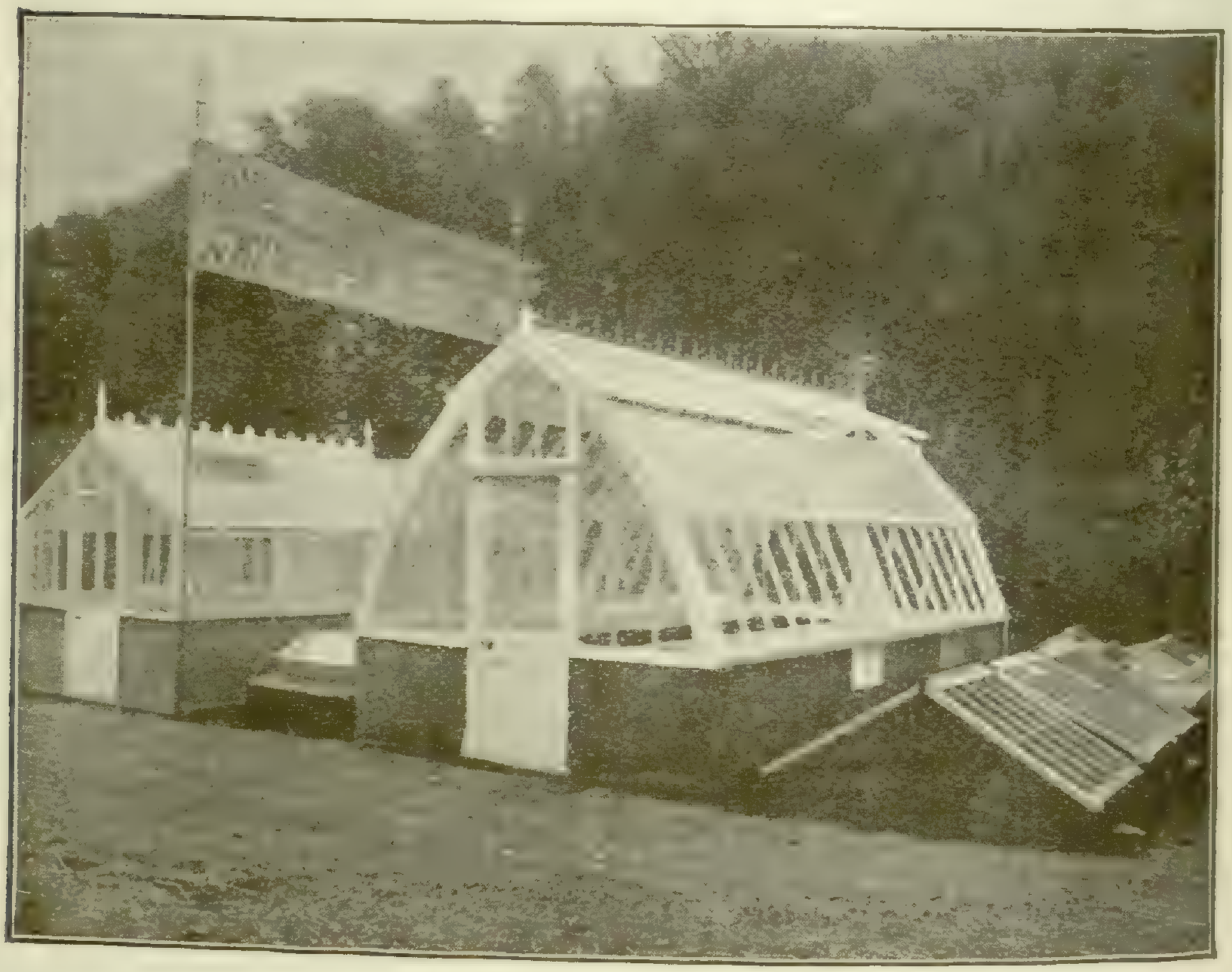

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TO LET.

THE ORCHID REVIEW.

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THE LATE REGINALD YOUNG'S HYBRIDISATION EXPERIMENTS.

IN our Obituary notice of the late Mr. Reginald Young (pp. 206, 207) we remarked that we hoped the origin of his numerous unflowered seedlings would not be lost sight of. A fortunate circumstance enables us to give some further particulars of the deceased gentleman's work. The greater part of the collection having now been sold (see p. 208), Mrs. Young, the deceased's widow, has forwarded his record books to us, thinking it desirable that they should be placed where they are most likely to be of service in the future.

Although Mr. Young cultivated a general collection of Orchids, his hybridisation experiments were chiefly confined to Cypripedes, and these were most extensive and were recorded with the most scrupulous accuracy. His record books were quarto in size, and were ruled in ten columns across the two pages, with headings as follows:—(1) Seed parent: (2) Pollen parent; (3) Catalogue number of the plants crossed; (4) Date of hybridising: (5) Date of sowing seed; (6) Apparent condition of seed when sown: (7) Number and name of the plant on which the seed is sown; (8) Date of appearance of seedlings; (9) If previously crossed, the name of the production, and (10) General Remarks. In this way Mr. Young had the history of each cross made, and the result. Thus column 5 sometimes records "Did not take," or "pod decayed," as well as the date of sowing, while "Failure" is recorded in the later columns where necessary. "Repotted" frequently appears in the column for date of appearance of seedlings, which means "no result," for repotting did not take place until that operation appeared necessary, and all hope of the appearance of seedlings had been given up. It may be added that as the seedlings were potted off singly each received a Catalogue number of its own, and these numbers we find extend to over 2,500. The number of seedlings raised was frequently recorded, and was generally few, there being many entries of "one seedling," and some of these subsequently "died." In one case "twenty-one seedlings" are

recorded. These details are given to show the methodical way in which Mr. Young's records were kept, and we must now pass on to give some details of the work itself.

Mr. Young's first recorded cross appears to have been made in 1889, and was C. Haynaldianum ♀ × Spicerianum ♂. The seed was sown on the pot of the former, and three seedlings appeared, which were duly referred to C. × Carnusianum. The date is not recorded, nor yet that of the second cross, which was C. villosum × barbatum Warneri, and yielded eighteen seedlings, but the third cross, C. superbiens × Godefroyæ, is recorded as made in May, 1889, the result being two seedlings, which subsequently died. The next five crosses gave no result, but the succeeding one, C. insigne punctato-violaceum × vexillarium, produced C. × Dædalus, Mr. Young's first novelty, which flowered in October, 1898 (See *O.R.* vi. p. 360). From the fourth cross onward the date of sowing the seed (if any) is regularly recorded, and we find ten sowings in 1891, and thirty-three in 1892, but only nineteen of them yielded seedlings. In January, 1892, Mr. Young commenced to record the date of hybridising, and this was continued regularly down to March 13th, 1906, when five crosses were made, the last entry being "× Pitcherianum magnificum × Rothschildianum." The aggregate number of crosses recorded is 1915. It would take some time to ascertain the proportion of failures, but a rough estimate can be given, because Mr. Young added an "O" in red ink, in front of the record, to indicate no result, and a similar "X" to indicate success, while the two signs were combined if seedlings were obtained but afterwards died. This item is complete down to February, 1897. Down to this period 624 crosses had been made, of which 148 had yielded seedlings, but as these died in 23 cases there remained 125 successes, being a proportion of almost exactly four-fifths failures. Of course, a good many difficult crosses were attempted, and repeated, and the various causes of failure will be understood, but we note a large number of cases where the seeds are recorded as "Very good" and "Splendid," yet no seedlings were obtained.

It is obviously impossible to go into details as to the nature of the crosses made. Mr. Young seems to have attempted most of those that were available from time to time, and the list includes many combinations from which good results might have been expected. Naturally, a good many of his successes had already been anticipated, and in these cases he was always able to trace the name from his copious records of the work of others, adding a varietal name whenever he thought the merits of the case demanded.

His own novelties are specially indicated, and it may be interesting to give a list of them, with their parents.

The chronological order is retained, and the seed parent placed first :—

C. × Dædalus (insigne punctato-violaceum × vexillarium superbum).
C. × Atropos (× Ashburtoniæ expansum × purpuratum).
C. × Lachesis (× Crossianum × marmorophyllum).
C. × Belus (× Harrisianum nigrum × Mastersianum).
C. × Clotho (× politum × Boxallii atratum).
C. × Quirinus (Spicerianum × Appletonianum).
C. × Zalmoxis (× Williamsianum × vexillarium superbum).
C. × Minos var. Youngii (Spicerianum magnificum × Arthurianum).
C. × Endymion (barbatum grandiflorum × Mastersianum).
C. × Nemesis (× Williamsianum × Boxallii atratum).
C. × Iphis (tonsum × Argus).
C. × Manto (Chamberlainianum × Harrisianum superbum).
C. × Ultor (Lawrenceanum × Sanderianum).
C. × Youngiæ (bellatulum × Volonteanum).
C. × Kubele (× œnanthum superbum × Youngianum).
C. × Juturna (× Orpheus Youngianum × Boxallii atratum).
C. × Rhodopsis (Charlesworthii × enfieldense).
C. × Wendigo (callosum × Sallieri Hyeanum).
C. × Thais (insigne × Orpheus Youngianum).
C. × Tautzianum var. Youngii (barbatum grandiflorum × niveum).
C. × Syrinx (tonsum × Youngianum).
C. × triumphans var. Youngii (× œnanthum superbum × nitens superbum).
C. × Xuthus (× chloroneurum × Appletonianum).
C. × Victorinus (insigne punctato-violaceum × Calypso Oakwood var.).
C. × Omphale (tonsum × Smithii).
C. × Faunus (purpuratum × Charlesworthii).
C. × Milo var. Youngii (insigne Sanderæ × œnanthum superbum).

Excluding the four varieties of pre-existing hybrids, we find twenty-three novelties, of which C. × Kubele is remarkable as having been derived from five species, as was pointed out when it was described (*O.R.* ix. p. 271). How many other novelties may yet appear in the now dispersed seedlings no one can guess, but these are numerous and have been derived from a large number of crosses.

We find also careful records of three dozen crosses made with a view of testing the influence of the pollen parent on the development of the capsule and seeds, the resulting capsules being exhibited at a meeting of the Linnean Society in March, 1900 (*O.R.* viii. p. 120).

Experiments with other genera were apparently few, but we find records of over fifty crosses, of Cattleya, Lælia, Sophronitis, Dendrobium, Odontoglossum, Masdevallia, Lycaste and Maxillaria, though seedlings are only

recorded in the case of Cattleya and Masdevallia, the rest being failures.

A good number of Orchids from Mr. Young's collection were figured by M. Goossens in the *Dictionnaire Iconographique des Orchidées*, and we find a list of them in Mr. Young's records, showing thirty to have been selected, all but three being Cypripedes.

It now remains to mention Mr. Young's extensive series of Cypripedium records, compiled with great industry during a long series of years. When and how it commenced we have no exact means of ascertaining, but first we find a small quarto volume in which the names of species and hybrids are entered alphabetically, with the author, country or parentage, introducer or raiser.

This is followed by a second list arranged alphabetically under the seed parent, followed by the pollen parent and the resulting hybrid. Lastly comes the records of Mr. Young's own experiments. This was soon outgrown, and we find them transferred to a larger volume, with a column added for references to descriptions and figures, the various awards granted to the plants being also kept posted up. At the end of this volume we find Mr. Young's own crosses, now greatly augmented, entered up. This goes to the end of 1898, when the space was exhausted, and Mr. Young copied out the Catalogue into a still larger volume, and started a supplementary "Hybridising record," commencing in 1899. In this the headings to the columns were all printed and ruled, showing that the volume was specially prepared. These two volumes were kept posted up to the last, in the neatest possible fashion. The value of the Catalogue is that by its means most of the recorded names can he traced.

All this did not exhaust Mr. Young's activities, for we find a list of varieties of Orchids in flower during each month of the year in the Fringilla collection, commencing in January 1901, and terminating in April 1906, the latter apparently unfinished, though not much smaller than the preceding month, when a total of 125 is entered. The monthly totals for 1901 are as ollows:—January, 128; February, 121; March, 108; April, 113; May, 107; June, 85; July, 82; August, 72; September, 67; October, 89; November, 110; and December, 128. Other years show a similiar decline during the months of June to September, July on an average being the dullest month of the year. Such a statistical record is interesting, and confirms the observations of others, though the details would vary according to the composition of different collections.

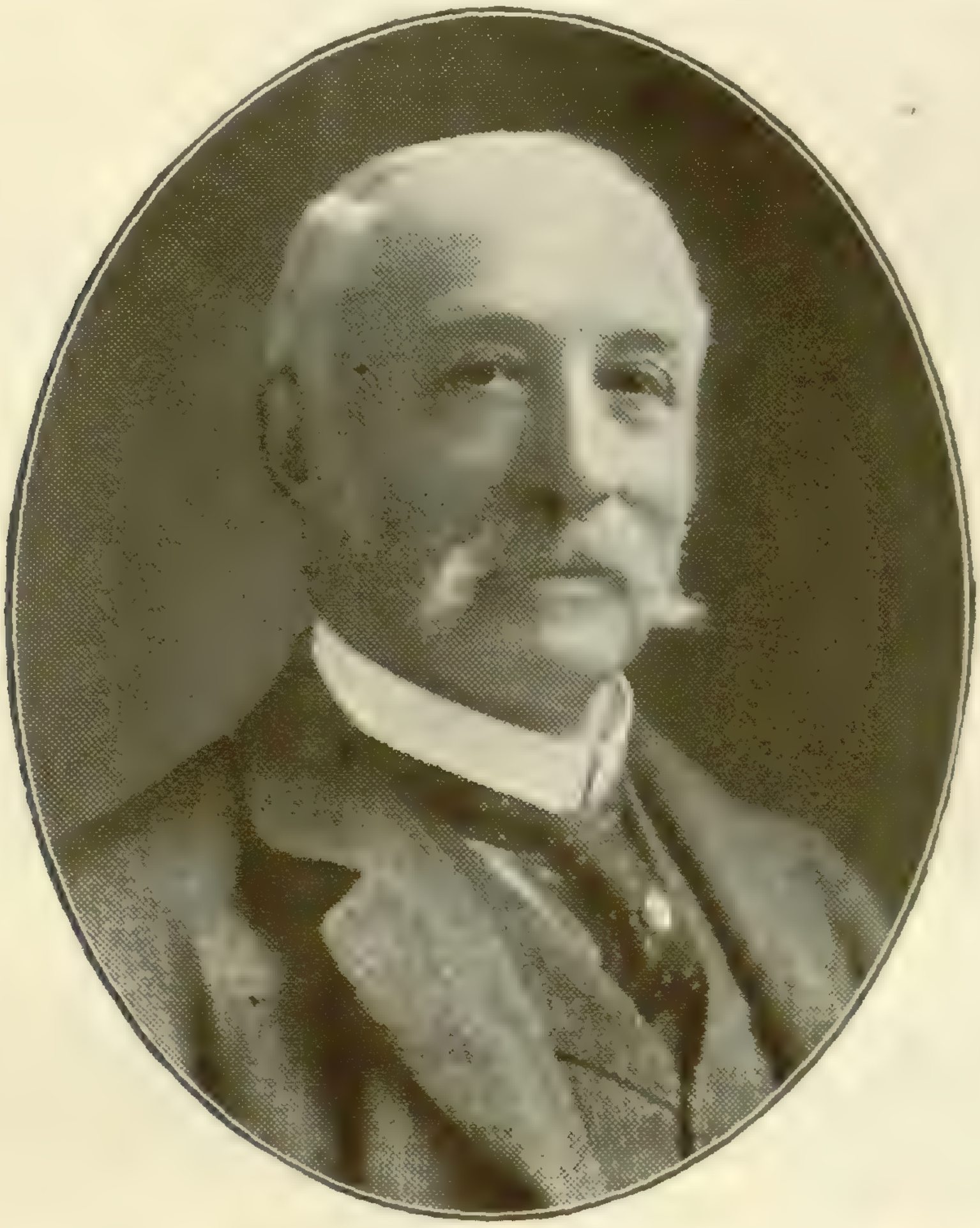
That Mr. Young was an enthusiast is certain, and we have gone into these details because we believe that they will be interesting to hybridists generally.

In conclusion we should add that he was always careful to acknowledge the assistance rendered by his able gardener, Mr. Poyntz.

THE LATE G. W. LAW-SCHOFIELD.

(With Portrait.)

WE announced last month the death of this distinguished Orchidist (p. 314), and now we have pleasure in giving his portrait, the block having been lent by the proprietor of the *Rossendale Free Press*, through the kind intervention of Elijah Ashworth, Esq., Chairman of the Manchester Orchid Society. We can add little to our remarks of last month, but Mr. Ashworth writes that the deceased was the oldest Orchid grower in the



district, the period extending over about forty years. Of late he has paid special attention to Cypripedes, his collection of these being one of the best. He was born on the 13th of September, 1839, and thus had nearly completed his 67th year. He was a great lover of flowers, and an admirer of all forms of legitimate sport, his special penchant in this direction being shooting and fishing. He was also an enthusiastic supporter of cricket. He was very highly esteemed, not only in the district in which he lived, but by all who came in contact with him. The late gentleman leaves two daughters, Mrs. Craven Hoyle, of Leabank Hall, and Miss A. L. Law-Schofield, of Newhallhey, his only son, Henry Hoyle Law-Schofield, having died in 1875, while quite an infant.

DISCOVERY OF GOODYERA REPENS IN NORFOLK.

A VERY interesting note by Mr. W. B. Hemsley, F.R.S., Keeper of the Herbarium, appears in a recent issue of the *Kew Bulletin* (p. 293), and may be reproduced here :—

"The Rev. Guy Halliday, of Bowhill, Bradninch, Devon, recently sent to Kew a specimen of an Orchid which he had collected near Holt, in North Norfolk, requesting its name. It proved to be Goodyera repens, and, in reponse to our request, he communicated the following particulars. Cycling to Holt, and botanizing by the way, he and his wife came to a pond with a pine-wood and heather adjoining. They strayed some hundred yards into the wood and had turned to go back when Mr. Halliday's eye fell upon an Orchid. This was carelessly pulled up under the impression that it was Spiranthes autumnalis, aud a hasty search was made for more, but unsuccessfully. Subsequent examination convinced him that it was not a Spiranthes; he thought it must be Goodyera, and to make sure he sent it to Kew.

"Until 1885 there was no convincing record of an English station for this plant, but in Baker's *Flora of the Lake District* it is recorded, on the authority of Dr. F. A. Lees, from a fir plantation between Penrith and Carlisle. In 1888, Mr. J. J. Marshall (*Journ. Bot.*, p. 379), recorded the discovery of several plants in Houghton Wood, near Market Weighton, S.E. Yorkshire. Now comes this one from Holt. The question arises, how did the Goodyera reach these modern pine-woods? This suggests another question, were the young pines brought from the forests of Scotland and seeds or roots with them? Possibly seed may have been conveyed by birds or intentionally sown by man. Whatever the history may be, it is almost certain that the Goodyera did not exist in these localities before the pines were planted. A similar isolated locality for this plant was pointed out to Mr. Bean by Mr. Maurice de Vilmorin, at Les Barres. This is also in a young pine-wood.

"Goodyera repens is one of the most widely distributed of Orchids, occuring all round the northern hemisphere. The specimen from Norfolk has been deposited in the Kew Herbarium on indefinite loan.—W. B. H."

Dr. Rendle points out that there are earlier records. In the *Journal of Botany* for 1902, p. 325, Mr. F. C. J. Spurrell writes :—"GOODYERA REPENS IN NORFOLK.—I found this in poor condition two years ago on Beeston Common, Norfolk; and lately in abundance in pine woods in the parish of Bodham, in the same county. The two places are some four or five miles apart, with a low watershed between. The plant grows amongst the heath and ling which covers the poor, sandy soil of the district."

In reply to this Mr. Arthur Bennett wrote (p. 393):—"This plant has been known to grow in Norfolk since 1885, where it was found at Westwick by Miss Southwell on July 8th, as recorded by the late Mr. Geldart in *Trans. Norf. and Norw. Nat. Hist. Soc.* iv. 255. In 1891 Miss A. M. Barnard found it in abundance in the neighbourhood of Holt. Mr. Geldart, when recording this (*op. cit.* p. 329, 1891-2), remarks:—"This locality is about twelve miles, as the crow flies, from Westwick, where the plant was first found in 1885 (where it has been since exterminated). It can hardly be regarded as truly wild in either locality. The Scotch firs, amongst which it grows, were probably brought from Scotland, and the plant with them. I agree with Mr. Geldart that there is doubt of its being indigenous to Norfolk. South of Scotland it has occurred in Cumberland and in Yorkshire."

A further note followed, by the Rev. Edward S. Marshall (*l.c.*, 1903, p. 25):—"I do not think this likely to have been brought from Scotland with Scotch firs; in Surrey, at least, they are raised from seed by nurserymen in large quantities, and are transplanted when about three years old. Its occurrence among heather, mentioned by Mr. Spurrell, is greatly in favour of its being native; thence it would readily spread to the more congenial fir plantations. Another theory of origin is possible; *viz.*, that the seeds, being so numerously produced, minute, and light, may have been wind borne from northern stations."

ORCHIDS AT KEW.

A PLANT of the long-lost and very pretty little Odontoglossum platychilum is now flowering in the Kew collection, though at present it is scarcely established, and has only produced a spike of two flowers, which differ from the original in having bright rose flowers with darker spots. Its history was given at page 61, but when that note was written it was not known that an importation of it had been secured. A good plant of O. × Halli-crispum is also to be seen, with an example of the natural hybrid O. × Humeanum and some good O. grande. The pretty little Dendrobium Victoria-Regina is also in bloom, and there are two fine specimens of Pleurothallis pulchella bearing numerous racemes of small light-green fragrant flowers. A good dark Cymbidium giganteum is also in flower, with C. longifolium, C. × Gammieanum, and the rare C. Dayanum.

In the adjacent Warm house is a nice batch of Paphiopedilum Fairrieanum, though the flowers are now past their best. Among numerous others in bloom may be mentioned P. callosum, P. Appletonianum, P. Stonei, P. × Crossianum, and P. × œnanthum, with Phragmopedilums Roezlii, Klotzschianum, × Titanum, and the handsome P. × Schrœderæ. Vandas

include good examples of V. Sanderiana, Kimballiana, and cœrulea, while Listrostachys bidens is producing a profusion of racemes of small buff flowers. Near by is a plant of the remarkable Mystacidium infundibulare, with examples of Sarcanthus teretifolius and Acampe papillosa.

The Warm house on the south side contains a nice batch of Dendrobium Phalænopsis and its variety Statterianum, which will make a fine display for some time if their natural enemy, fog, should keep away. The white flowers of D. formosum furnish an agreeable contrast. There is a fine spike of Eulophia guineensis, the handsome rosy purple flowers remaining fresh for some weeks. The quaint genus Catasetum is represented by C. Christyanum, C. Trulla, C. Œrstedii, and the rare C. Darwinianum, while Epidendrum floribundum, E. purum, and a well-bloomed Oncidium flexuosum add to the display.

The "botanical corner" contains numerous objects of interest, including a charming little plant of Epidendrum Endresii with three spikes, Miltonia Roezlii alba, Bulbophyllums Dearei, grandiflorum, rufinum, crassipes, papillosum, and Gentilii, with Cirrhopetalum refractum and C. blepharistes, Eulophia monophylla, Bifrenaria aurantiaca, Platyclinis rufa, Polystachya tessellata and P. luteola, while suspended overhead are Lanium Berkeleyi and Trias picta.

The Cattleya house is gay with bloom, and includes such fine things as Brassocattleya heatonensis and B.-c. Warneri × Digbyana, a brilliant Lælio-cattleya Cappei, L.-c. massiliensis, Lælia Perrinii, some good Cattleya Bowringiana and labiata, C. Loddigesii, the rare C. Dormaniana, and a good C. Dowiana aurea. Oncidium obryzatum produces a fine compact panicle of yellow and brown flowers and is one of the best, others in bloom being O. varicosum var. Rogersii, O. incurvum, O. Wentworthianum, O. ornithorhynchum, and two good clumps of the neat little O. cheirophorum. Other attractive things are the robust and free-flowering Epidendrum × kewense and E. × O'Brienianum, Brassia Lawrenceana and longissima, Maxillaria grandiflora, and Sobralia Lowii. This does not by any means exhaust the list, and the numerous things in bud promise a succession for some time to come.

The Odontoglossum house has been recently reconstructed, and is now a span-roofed structure, running north and south, built on quite modern principles, with lath roller blinds, top and side ventilators of recent pattern, open stages with a water tank beneath, in fact with the improvements which experience has shown to be desirable or necessary. The plants will now get plenty of light during the winter, when it is so important, and the improved conditions and additional space should have a beneficial effect on the collection generally.

CULTURE OF PAPHIOPEDILUM FAIRRIEANUM.

THE question of the most suitable cultural treatment for Paphiopedilum Fairrieanum has been much discussed, and now that the species is once more common it becomes a matter of great importance, for we do not want history to repeat itself with this interesting plant. A charming little photograph has been sent to us by M. Joseph Ginot, St. Etienne, France, together with the following letter :—" Herewith I send you a photograph of Cypripedium Fairrieanum. This plant gave me four flowers last year, and this year it has just borne five. I acquired the plant from Mr. Sander, and on the advice of Mr. Lefebvre, his representative, I established it in a very

FIG. 43. PAPHIOPEDILUM FAIRRIEANUM.

substantial compost, thoroughly drained. I have cultivated it until the present year in a cold house, low and very damp, in which I raise Orchid seedlings and Bertolonias. It is a flower of this variety which is reproduced in the *Dictionnaire Iconographique des Orchidées*."

As the species has been so recently figured we rather hesitated about reproducing this photograph, but two reasons induced us to publish it. One is that it will enable our readers to judge of the success of the treatment, the other that the broad, short, spreading leaves are so distinct from the one previously illustrated (*O.R.* xiii. p. 265, fig. 62). One of the Kew

plants has also broader leaves, and a dwarf scape much like the one now figured.

A very interesting experiment made in the collection of J. Gurney Fowler, Esq., has just been recorded (*Gard. Chron.*, 1906, ii. p. 239). Acting on the suggestion that the plant should be tried in a Cool house, as the earlier ones seemed to have been killed by being kept too warm, he placed the greater number of his plants with the C. insigne varieties, where several are now in bloom, all with sturdy foliage, equal in vigour to the specimens of C. insigne. One of the best plants was allowed to remain in the warmest Cypripedium house, and this is not nearly so vigorous or healthy looking.

CALENDAR OF OPERATIONS FOR NOVEMBER.

By J. M. BLACK, STREATHAM.

OUTSIDE the Odontoglossum house, and excepting some Cypripediums and some Miltonias, few plants are now in active growth. A few plants in the Cattleya and Intermediate houses, such as Cattleya Lawrenceana, Lælia purpurata, some Phaius, and other odds and ends, may not have finished growing, and should be treated as growing plants with regard to watering, but always bearing in mind that the days are now short and evaporation slow.

Many plants are developing their spikes, such as Lælia anceps, L. autumnalis, many Cattleya hybrids, Cœlogyne cristata, &c., and these should never be allowed to get very dry, or remain so for long, so that the growing spikes receive no check. Plants which have finished, and have now entered on a period of rest, should require only sufficient water to keep the bulbs plump, but it is bad treatment to let the pseudobulbs shrivel before applying it, and then wait until the plant is again in distress before giving more. This treatment is weakening for the plant, and may start it to grow prematurely. Keeping Cattleyas uniformly wet during the winter never yet made them start to grow before their time. To dry them up severely concentrates, as it were, the resting period, and then when water is applied they may start to grow. If the atmosphere is kept airy and on the dry side among resting plants—which is as it should be—leaf transpiration is considerable all the winter, and if there is no moisture at the root to replace this, the plant will, so to speak, consume itself, and become lighter in weight.

It is a mistake to dry either Dendrobiums or Cattleyas to any severe extent, with the intention of giving them a thorough rest. One is quite safe to water the latter, and other evergreen species of a similar nature, when they are dry, but our experience has taught us that there are several which require the drying to be somewhat more accentuated than is the rule.

Cattleya superba is one of those. This plant is somewhat difficult to grow and flower. It does not like root disturbance, and seems to be satisfied with scanty fare.

Lælia majalis, Odontoglossum citrosmum, and a few others are noteworthy as requiring an especially dry rest, although evergreen, but it is quite easy to carry the drying too far even with them. Although the bulk of Cattleyas and Lælias have finished above ground, the roots remain more or less active during the winter, and plants which will go through another season without re-potting may have any re-surfacing which they will require performed now. This will save time when the busy season comes round again, and the roots will also run freely in the fresh material, and get a good hold, ready for spring.

Wholly deciduous pseudobulbous Orchids, like Mormodes, require hardly any water during the winter, while the tuberous-rooted, deciduous genus Habenaria requires no water at all when at rest.

PHALÆNOPSIS.—Particular care must be exercised in watering these plants during the winter months, for having no pseudobulbs to rely on, they must never become thoroughly dry, but should be kept on the dry and safe side, and never be drenched during the dull season. Although the temperature required by these plants is a comparatively high one, avoid any sense of stifling through keeping the ventilators too close.

The temperatures for the present month should be as nearly as possible as follows :—

EAST INDIAN HOUSE.—Day, 70° to 76° ; night, 65° to 68°.

CATTLEYA HOUSE.—Day, 65° to 68° ; night, 60° to 64°.

INTERMEDIATE HOUSE.—Day, 60° to 64° ; night, 55° to 58°.

COOL HOUSE.—Day, 55° to 58° ; night, 50° to 54°.

The lower night temperatures should be registered in the morning, and the lower day temperature during sunless, cold weather.

VENTILATION.—Take advantage of all fine days and ventilate freely, avoiding draughts. Aim at having the air in all the houses in circulation ; though warm, it should not be heavy. But I think I have been over this ground before.

LIGHT.—In the London districts washing the outside glass enters largely into the calculations of the Orchid grower during the winter, but just how often it will want doing will depend upon how kindly or otherwise he is treated. It has been our experience to wash through twice with only sufficient interval to make sure that the second visitation had deserted us ; but that was an exceptionally bad year. I feel that I want to growl, but shall restrain myself. Clean the woodwork and glass when going through re-arranging and washing the plants, and do your best to find as much light as possible for them during the resting season.

OLD ORDER OF THINGS CHANGING.—As I have had occasion to remark before in these pages, the older order of things is gradually passing away in our Orchid houses. Fewer and fewer plants are being imported, and more and more are being raised from seed, and, as the years go on, a greater brilliancy will be evolved than at present exists, particularly in the Odontoglossum department, as by selection the Orchid grower will be able to work out his object. Occasionally one hears a despondent note, such as, "Hybrids have seen their day, and presently everybody will be falling back on species again"; but this is utter nonsense, retrogressive, and contrary to the teaching of the history of gardening.

Time was when, with the advent of winter, we used to comfortably settle ourselves down to plant washing and house scrubbing, but these things, although of great importance, do not by any means absorb the Orchid grower's whole attention during the resting season. Speaking from first hand experience with seedlings in large enough quantities to prohibit the possibility of repotting all in the months of spring and summer, the coming of winter, although seeing some relaxation in the repotting of these plants, does not by any means see its cessation. Where seedlings have been raised during the summer, there will always be some trouble about, and constant handling and attention will be necessary to ensure good results. The work of raising seedling Orchids—or even trying to raise them—is the most engrossing part of the Orchid growers work; and the most pleasurable, the flowering of them. As the numbers increase around him, he may develop symptoms of callousness, but these same numbers very surely keep his nose to the grindstone, and, as they grow, the work becomes increasingly difficult to meet. The spring and summer entail an amount of routine work, with shading, syringing, &c., which will now be curtailed, and the repotting of many seedlings which had to be left over then may now be proceeded with.

It is a matter of gratification that small seedling Lælio-cattleyas and Odontoglossums do not seem to mind in the least being repotted during the winter, providing the operation be done carefully, and they are accommodated afterwards in cosy quarters; but it is worse than useless to attempt the repotting of small Dendrobiums at the fall of the year. There is, unfortunately, an infinite amount of work in connection with the raising of Orchids which has to be repeated, and which shows nothing for the labour. They are fickle customers until they have got roots. With all the experience that we can conjure up, it sometimes happens that the same seedling has two or three changes before it roots, although, thankfully, in most cases it has much more peace.

The little grub which is hatched in the compost is the enemy which causes most mischief, but damping is also to be guarded against. The

latter is the Odontoglossum's favourite means of quitting. I have exhausted all my little stock of ingenuity in trying to get rid of this grub—methylated spirit, ether, and various insecticides in solution—and although I am satisfied that I have made him sick from time to time, and even brought about his death, the Orchid has invariably expired first, the sphagnum next, the grub making a reluctant third. We have tried to stare him out of countenance (through a glass) until we have had shooting pains in the socket of the eye, but he has not been in any way discomfited. I have pushed needles into him and left him as an object lesson for his relatives, who have nevertheless continued the attack with unabated vigour, and in the end we—that is myself and the seedlings—have capitulated. It is the delicate and slow growing seedlings, such as the Sophronitis crosses, which are in most danger; a robust grower quickly gets a tough skin and a root, when the grub will stop molesting it, for he is nothing if not an epicure. This grub is apparently most active when the surface is dry.

Now that the fungus question is settled to the satisfaction of *Argus* (although it has not yet been handed round!), perhaps some one will tell us how to kill this grub—or, better still, its eggs—without injuring the moss, or rendering it distasteful to the embryonic seedlings. [Has this grub or insect been identified? We are not sure what it is. A knowledge of its history might suggest some remedy.—ED.].

ECHO OF THE HEAT WAVE.—I had some conversation with an eminent and successful Odontoglossum hybridist at a recent meeting in Vincent Square, and he was lamenting the havoc that the heat wave of August and September made among his germinating Odontoglossum seedlings. Although retrospective, I may be forgiven for alluding to this, as I want to pass an opinion; for, although the germinating Odontoglossums at Chessington did not make much headway then, they came bravely through the heat, and as London was about the hottest place in the British Isles there must be a reason. I attribute our success (or luck) in this instance to our having double lath blinds for shading on the seedling house, the top one being over a foot, and the lower one only a matter of an inch or two, from the glass. With an outside temperature of something over 90° in the shade, the house was not cool by any means, but the glass was cool, and the plants standing immediately underneath this had the benefit of it. When the weather became cooler we used the bottom blind only. The question of shading is of much more importance than is perhaps generally thought, and it is also a question upon which there is some divergence of opinion. [The best means of keeping the temperature down in the cool house during very hot weather without cutting off too much light is a very important one, and the experience of others would be interesting.—ED.].

ODONTOGLOSSUM HARRYANUM.

A CORRESPONDENT asks us to devote an article to the culture of Odontoglossum Harryanum, a species which does not succeed well with him, and we may remark that others have experienced a similar difficulty.

The secret is that it requires slightly warmer treatment than many of its allies, which is due to the fact that it grows at a rather lower elevation. Five years ago we cited (*O.R.* ix. p. 256) a note respecting a batch of plants which had been grown on a shelf in a glass potting-shed, with a higher temperature all the year round than that usually given to Odontoglossums. They were said to be in a very healthy condition, full of vigour, and flowering wonderfully every year. They had not been potted for at least six years. We believe the locality was Trentham, where we had previously seen a batch of remarkably fine plants in a precisely similar situation. A year later M. Burberry remarked (*O.R.* x. p. 186) :—"The plants seem to grow best in the Intermediate house, in a compost consisting of equal parts of fibrous loam and lumpy peat, with an addition of chopped sphagnum moss, using the bracken rhizome for drainage. Press the compost moderately firm, and afford the plants moisture at the roots liberally at all seasons, for shrivelling of the pseudobulbs will soon occur if they are allowed to become dry."

Long before the habitat was known it was conjectured that the plant grew at a lower altitude and in a warmer climate than its allies, and after various houses had been tried we find the Cattleya house recommended as the most suitable. See cultural notes under *Reichenbachia*, ser. 1. ii. p. 1, t. 49, and *Orchid Album*, viii. t. 366. In the former work it is said that wild racemes grow to a yard high. It is said that the cultural conditions applicable to O. hastilabium are the most suitable for O. Harryanum, and we suspect that the case would be met by removing the plant into the Intermediate house for the winter. Some of our readers have now had considerable experience with this species, and we should be glad if they will give us the benefit of their experience.

The species was described twenty years ago (Rchb. f. in *Gard. Chron.* 1886, ii. p. 486), from materials furnished by Messrs. James Veitch & Sons, who first flowered it. The stock was purchased from Messrs. Fred Horsman & Co., of Colchester, who imported it, through M. Rodriguez Pantocha. Shortly afterwards Messrs. Sander also obtained a supply of plants, and the species became fairly common in cultivation. The habitat was not recorded until about six years ago, when M. Fl. Claes communicated the fact that it grows in the vicinity of Yarumal, in the Antioquia district. On looking this up on the map, we find that Yarumal is almost due north of Medellin, and that Santa Rosa is almost exactly intermediate

between the two places. It is near the source of the Rio Canaverales, a tributary of the Rio Nechi, which flows into the Cauca. It would be interesting to know a little more about the precise altitude, and the conditions under which it grows, but so far as we can judge it occurs at a slightly lower elevation than O. crispum, which would account for its requiring rather warmer treatment.

ORCHIDS AT RAWDON, LEEDS.

WHILE in this neighbourhood some time ago, I paid a visit to the nurseries of Messrs. J. W. Moore, Ltd. The nurseries are situated some seven or eight miles from Leeds, in the centre of the beautiful woods of Rawdon. Recently they have come under new management, and are now exclusively turned over to the culture and sale of Orchids.

Several improvements have, and are now, being made, to bring the glass structures more up-to-date with present day requirements. That this aim has not been in vain, is shown by the great improvement in the health and vigour of the plants contained in the various compartments.

The first house entered acts as a sort of corridor, from which several more lead off. Here we noticed a fine lot of healthy Cymbidiums, such as C. Tracyanum, Lowianum and giganteum, a great many of these showing numerous strong spikes.

The next house contained fine healthy batches of Oncidium ornithorhynchum, in flower and spike, Odontoglossum grande, Vanda Amesiana and V. Kimballiana, Trichopilia tortilis and Lycaste xytriophora in flower, also a good lot of Odontoglossum hastilabium semi-established.

The next compartment was filled with a beautiful lot of unflowered Odontoglossum crispum, which show fine vigour, and promise well later. Another span-roofed house contained a splendid healthy lot of Masdevallias, in great variety, and a few may be mentioned, as M. amabilis, Barlæana, Benedicti, Chestertoni, Harryana in variety, Lindenii, muscosa, peristeria, Shuttleworthii, Wageneriana, ignea and tortilis. A small batch of Odontoglossum seedlings next came in for attention, also fine imported plants of Oncidium varicosum, and Odontoglossum.

Retracing our steps we next entered a house filled with Cattleya Mossiæ and C. labiata; these having arrived somewhat late in the year were in the midst of growth, and looked very promising. In a succeeding compartment we were pleased to see a fine batch of Cypripedium Charlesworthii in flower, which formed a delightful contrast in size and colour.

Our attention was next called to a fine lot of Lælio-cattleyas, mostly showing for flower. Amongst them we noticed L.-c. luminosa, L.-c.

callistoglossa, L.-c. Ingramii, L.-c. Canhamiana, L.-c. Hyeana, L.-c. Doris, L.-c. Statteriana, and L.-c. Wellsiana; also Cattleya × Iris, C. × Niobe, C. × Clarkiæ, and C. × Lord Rothschild. Adjoining these we noticed a lovely lot of Dendrobium Phalænopsis in flower, showing great variety in colour, and fully demonstrating its usefulness during late autumn. The next compartment was given over entirely to Dendrobiums. This house is span-roofed and fairly lofty. The appearance of the plants showed that the conditions had evidently suited them, as was shown by the fine, sturdy and healthy lot of pseudobulbs made during the growing season. Those calling for comment were D. nobile, D. Wardianum, D. aureum, and a fine lot of the better known hybrids.

The next house entered contained a superb lot of Cypripedium hybrids and species, amongst which we noticed some choice things. Mention may be made of the following: C. × aureum Cyrus, C. × Hyeanum, C. × Baron Schröder, C. × Euryades magnificum, C. × Maudiæ, C. × Milo, C. × Minos, C. × Mrs. W. Mostyn, C. × Pollettianum magnificum, C. × Queen of Italy, and lastly a choice lot of unflowered crosses.

Amongst a batch of C. Spicerianum showing flower, a piece of C. Charlesworthii was seen flowering in the same receptacle, and as no one seemed to know how it got there, it really suggests that the latter must have been imported with the C. Spicerianum.

To see a fine lot of Vanda cœrulea in good health at any time is something worth seeing, but to see a large house full of this lovely Orchid is something to remember. Messrs. J. W. Moore have made a speciality of importing Vanda cœrulea, and dispose of several thousands yearly. About two hundred of the established plants were throwing up their spikes, some with three and four, and two fine plants we noticed had seven and eight. What a sight for the Orchid enthusiast, when in their beauty!

The adjoining compartment was filled with unflowered Cattleya Mendelii, all of which looked vigorous and healthy.

We next visited the Odontoglossum house; and on entering remarked on the fine healthy appearance of the plants. They had just recently been potted, in Osmunda fibre, surfaced with moss, and from the vigorous appearance of the young growths this material is to be recommended as a potting medium. I have had occasion to use it largely in conjunction with Polypodium fibre, this last two years, and find it suits the Cattleyas, Lælias, and hybrids, Dendrobiums and Odontoglossums; so much so, that peat and leafy soil are now seldom used.

Mr. Mansell, the new manager, who until recently was with Messrs. Charlesworth & Co., is quite in raptures with this material, and predicts a great future for it as a compost for Orchids.

J. MACKAY.

ONCIDIUM CANDIDUM.

THIS is a very distinct and graceful little species, which we believe is not common in cultivation, though the annexed figure will show that it is well worthy of more attention. The figure is reproduced from a photograph, taken by Mr. C. P. Raffil, of a plant which recently flowered at Kew, and is about one-fourth natural size. It was originally discovered by Hartweg in Guatemala, in 1840, when collecting plants for the Horticultural Society, and was described by Lindley in 1843 (*Bot. Reg.* xxv. Misc. p. 56). the author remarking that he only possessed a sketch, he having lost the specimen, while the plant had disappeared. Twenty years later Reichenbach

Fig. 44. ONCIDIUM CANDIDUM.

described it under the name of Palumbina candida, from a plant which flowered in the collection of Consul Schiller, of Hamburg (*Walp. Ann.* vi. p. 699), and this plant, it appears, was obtained from Messrs. Loddiges on the breaking up of their collection. It was also figured under this name in the *Botanical Magazine* (t. 5546), from a plant which flowered in the collection of John Day, Esq., when Mr. Bateman stated that the original one flowered with Messrs. Loddiges, and that the stock introduced by Hartweg had probably been lost, owing to being kept too warm, as it was easy to grow in a moderate temperature.

It is now generally known as Oncidium candidum, and is placed in Lindley's group Tetrapetala macropetala, yet it is quite an anomalous species, totally unlike any other, and its nearest affinity is still uncertain. Although the figure is much reduced, the shape of the flower is clearly seen, and it is only necessary to add that the colour is milk white, with a small yellow tuberculate crest.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING was held at the Royal Horticultural Hall, Vincent Square, Westminster, on October 9th, when there was a fine display of Orchids, and the awards consisted of three Medals, two First-class Certificates, one Cultural Commendation, and five Awards of Merit.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), staged an excellent group, to which a Silver Banksian Medal was awarded. Prominent in the centre was a fine example of Oncidium ornithorhynchum album with several spikes, side by side with the typical form. There were also Lælio-cattleya Perrilosa (L. Perrinii × C. granulosa), L.-c. tene-Gottoi (L. tenebrosa × L.-c. Gottoiana), both of which are described on another page, L.-c. Parysatis, Cattleya × Mrs. J. W. Whiteley, C. labiata, C. Bowringiana, C. × Ariel, C. Warscewiczii, Lælia Dayana delicata. Stelis pubescens, Pleurothallis lateritia, Masdevallia simula, Phalænopsis violacea, Odontoglossum crispum, Cypripedium insigne Ernesti, C. Godefroyæ leucochilum, C. × Janus, and C. × C. Richman, the whole forming a most interesting exhibit.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), showed the handsome new Cymbidium erythrostylum (Rolfe), which gained a First-class Certificate. It has white flowers, the sepals and petals having a slight blush tint, with some light rose spots at the base, the petals being extended over the column. The lip is three-lobed, with a short front lobe, the colour yellowish, with many close red lines, and the column bright crimson. The flowers are borne on arched spikes, each spike bearing from three to seven, and the foliage is very graceful. Mr. Bradshaw also exhibited Lælio-cattleya G. G. Whitelegge (L.-c. callistoglossa × C. Hardyana), this gaining an Award of Merit. It was a large and remarkably handsome hybrid, having white sepals and petals, tinged with lilac, and the lip very broad, dark claret-purple in colour, with a narrow lavender-coloured margin, and some orange lines at the base.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), also showed a fine example of Cymbidium erythrostylum, described above, with four spikes, bearing an aggregate of 23 flowers. A First-Class Certificate was awarded.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), obtained a First-class Certificate for Cattleya × Mrs. J. W. Whiteley, Rosslyn variety (Bowringiana × Hardyana), a large and handsome flower, with magenta-rose sepals and petals, and the lip dark ruby with gold lines at the base. The plant had one spike of ten flowers.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), sent Lælio-cattleya Goodyi (C. Wendlandiana × L.-c. Clive var. broomfieldiensis), having handsome rose-coloured flowers, with a very dark rich claret lip, veined with gold at the base; C. × McMasteræ (Schilleriana × Mendelii), a large flower, white, tinged with rose, and the lip white at the base, the isthmus yellow, and the front rose-purple; also Lælio-cattleya Phryne, Gatton Park variety (L. xanthina × C. Warscewiczii), having very shapely flowers, with light canary-yellow sepals and petals, the front of the lip dark rose, and the disc yellow. To the last an Award of Merit was given.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed Odontoglossum × Una (crispum × nevadense rosefieldiense), having white flowers, blotched with brown on the sepals, petals, and the basal half of the fringed lip; the fine Miltonia × Bluntii rosefieldiensis, and the handsome M. Clowesii rosefieldiensis, having the sepals and petals Indian yellow with broad chestnut bands, and the lip tinted with lilac at the base, the colour changing to white on the broad front lobe. An Award of Merit was given to the last named.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), sent a fine example of Cattleya × Wendlandiana, C. × Goossensiana, and the large Cypripedium × H. S. Goodson (Swinburnei × T. B. Haywood).

A. Huth, Esq., Oakley House, Putney (gr. Mr. Fisher), showed a magnificent specimen of Odontoglossum grande, bearing five spikes, with an aggregate of twenty-three flowers, for which a Cultural Commendation was given.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), exhibited the curious Brassocattleya Digbyano-Forbesii, having greenish flowers slightly marked with purple; and a very fine specimen of a handsome light-coloured form of Cattleya × Hardyana, bearing six flowers on one spike and four on another. The plant, which was in very fine condition, had been grown from a very poor specimen. A Cultural Commendation was given.

E. Roberts, Esq., Park Lodge, Eltham (gr. Mr. Carr), showed the large and handsome Cypripedium × bingleyense superbum.

F. Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), exhibited Cattleya × Mantinii, The Premier, having large and well-shaped bright rose flowers, with a rich ruby lip lined with gold at the base; and Cattleya

× Mrs. Frederick Knollys (granulosa Buyssonsiana × Bowringiana), having broad and expanded rose-purple sepals and petals, and the lip nearly entire, deep purple, with a pale undulate margin and a few purple lines on the disc.

Messrs. Sander & Sons, St. Albans, obtained a Silver Flora Medal for a fine group, containing several good forms of Cattleya × Hardyana, including part of the original plant, C. × Boadicea, C. × Pittiana, C. × Ella, C. × bellatula (Warscewiczii × Iris), closely resembling C. Warscewiczii, but with a trumpet-shaped lip, C. Gaskelliana alba, C. Warscewiczii Sanderiana, Vanda Sanderiana, Lælia Perrinii, Catasetum macrocarpum, C. maculatum, Miltonia vexillaria Lawrenceana, with a strongly-marked dark crimson blotch at the base of the lip, M. × Bluntii Lubbersiana, Lælio-cattleya Ascania, Stelis pubescens, Lycaste Skinneri alba, Odontoglossum × amabile bella, having clear white flowers handsomely blotched with claret-purple, O. tripudians var., Cypripedium Fairrieanum, C. × Niobe, C. insigne Laura Kimball, C. i. Chantini Lindeni, C. i. Sanderæ, Seraphyta multiflora, Brassocattleya heatonensis, Bulbophyllum odoratissimum, Lælio-cattleya flavina (C. flava × L. pumila), L.-c. bletchleyensis, and a fine mottled L.-c. Henry Greenwood, Dendrobium ciliatum, Vanda Kimballiana, and two good V. Sanderiana.

Messrs. Heath & Sons, Cheltenham, staged an excellent group, consisting chiefly of Dendrobium Phalænopsis, with a few var. Statterianum, together with D. formosum, six examples of Cypripedium insigne, Cattleya × Mantinii, and others. A Silver Banksian Medal was awarded.

Messrs. Hugh Low & Co., Enfield, showed the handsome Cattleya × Pittiana Low's var. (Schofieldiana × Dowiana aurea), having the sepals and petals rich rose, with an orange shade, the lip being also finely coloured. An Award of Merit was given.

Messrs. T. Rochford & Sons, Turnford, Cheshunt, exhibited Cattleya × Hardyana, Our Queen, having cream-white sepals and petals, and a claret-purple lip, finely veined with gold at the base. An Award of Merit was given.

Messrs. Stanley & Co., Southgate, sent Miltonia Binoti var. Harrisii, having broad sepals and petals, closely barred with light brown, and a finely expanded purple lip.

At the meeting held on October 23rd there was a remarkably fine display of Orchids, and the awards consisted of one Gold and eight other Medals, three First-class Certificates, two Awards of Merit, one Botanical Certificate, and a Cultural Commendation.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), staged a magnificent group, to which the Society's Gold Medal

was awarded. Prominent in the centre were some fine examples of Oncidium varicosum, and with them were some showy forms of Cattleya labiata, the variety alba being represented by a plant with three flowers Among other Cattleyas were C. × Hardyana, C. Dowiana aurea, a group of C. × Mantinii, and many fine varieties of C. × Lord Rothschild, one form having the disc of the lip a rich shade of red-brown. Cypripediums were well represented by a fine C. × Charlesianum, the large C. × Chapmanii, superbum, C. × Niobe, C. × triumphans magnificum, C. × Maudiæ, C. × Leeanum, and its varieties, C. Fairrieanum, C. × Draco (Euryades × insigne magnificum), and a remarkable series of varieties of C. insigne, one of the Harefield Hall variety having seven large flowers, and a plant of C. i. Sanderæ bearing fourteen blooms. There were also Vanda Kimballiana, V. cœrulea, and other plants.

Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), received a Silver-gilt Medal for a splendid group, containing a good series of the white and coloured forms of Lælia pumila, L. p. superba and magnifica being very fine, while the Gatton Park variety has white flowers with a peculiar slate-blue front to the lip, and is very floriferous. In the group were also Cattleya labiata, C. × Mantinii, C. Bowringiana, the home-raised C. × Browniæ (figured at page 345), Cypripediums, Odontoglossums, and other plants.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), staged an excellent group, to which a Silver Flora Medal was awarded. Some fine forms of Cattleya labiata were seen, the best being C. I. Cooksonæ, the violet lip having a broad white margin. There were also Saccolabium calceolare, Brassia Lawrenceana longissima, the almost white Lælia Perrinii leucophæa, Sophrocattleya Chamberlainiana, Cattleya × Portia, Odontoglossum crispum Sir Frederick, having many light brown blotches on its white flowers, and Cypripedium × Marjorie (Leeanum × insigne sylhetense). A First-class Certificate was given to the beautiful hybrid Cypripedium × Muriel Hollington (niveum × insigne).

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), gained a Silver Flora Medal for a fine group, containing Cattleya labiata, Miltonia spectabilis Moreliana, Cypripedium × Maudiæ, C. Fairrieanum, C. insigne Sanderæ, C. i. Harefield Hall var., C. × H. S. Goodson, and the handsome Cattleya × Octave Doin, var. Herbert Goodson (Mendelii × Dowiana aurea), which gained a First-class Certificate. This has broad white sepals and petals, delicately mottled with lavender, and the finely crimped lip, crimson-purple in front, while the disc is orange, lined with red at the back.

Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), showed a fine group, to which a Silver Flora Medal was awarded. A Cultural Commendation was given to about two dozen pots of the pretty bright scarlet

Habenaria militaris, in perfect condition, each bearing one to three spikes. There were also some good Miltonias, and several forms of Lælia pumila. L. p. delicatissima being a fine white flower with a slight blush tint.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), received a Silver Banksian Medal for an excellent group, including a very fine example of Cypripedium × Charles Richman, C. insigne Ernesti, C. i. Miss Corbett, Pleurothallis scapha, P. cardium, and P. velaticaulis, the latter, a floriferous species, about a foot high and bearing erect spikes of pale green fragrant flowers, receiving a Botanical Certificate.

G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), received an Award of Merit for Dendrobium Phalænopsis var. Phyllis Moore, a shapely flower, white in colour, with the disc of the lip faint pink.

R. G. Thwaites, Esq., Streatham (gr. Mr. Black), showed several good Cattleya × Iris, C. × Robert de Wavrin (Schrœderæ × Schilleriana), with rose-coloured flowers resembling the latter species, Lælio-cattleya Ophir. and Brassocattleya Mrs. J. Leemann inversa (B. Digbyana × C. Dowiana aurea). The last-named, which obtained an Award of Merit, is said to be the first Brassocattleya with B. Digbyana as the seed-parent. The sepals and petals are sulphur-yellow, the disc of the lip bright yellow, marked in front with rosy lilac, and prettily fringed, while the base is lined with dark reddish purple.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed Odontoglossum × Urania (crispum × cristatellum), having cream-white flowers blotched with purple brown, the fine dark Miltonia spectabilis nigrescens and M. s. rosefieldensis, both of the Morcliana type, and Odontoglossum crispum Angel, with broad segments bearing clusters of purple spots.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), showed the handsome Cypripedium × Troilus, in colour yellow, with the upper half of the dorsal sepal white.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), exhibited Brasso-epidendrum stamfordiense (E. Parkinsonianum × B. glauca), having a curious greenish-white flower.

The Marquis de Wavrin, Somerghem. Belgium (gr. M. de Geest), sent Cattleya × Wildemanii (velutina × Trianæ alba), having white sepals and petals, and the lip veined with rose, and two forms of C. × Robert de Wavrin (Schrœderæ × Schilleriana), the flower of which is white, tinged with rose, and with rose-purple markings on the lip.

Messrs. Charlesworth & Co., Heaton, Bradford, obtained the award of a Silver-gilt Flora Medal for a splendid group, chiefly of showy hybrids, including Lælio-cattleya Issy, L.-c. luminosa, Cattleya × Mantinii, C. × F. W. Wigan, C. × Octave Doin, C. × Vulcani, C. labiata, Odontoglossum

× Hallio-crispum, O. nebulosum, Brassocattleyas, and other fine autumn-blooming plants.

Messrs. J. Cypher & Sons, Cheltenham, secured a Silver Flora Medal for a large and well-arranged group, containing a series of Cypripedium Fairrieanum bearing many flowers, C. × triumphans Westonbirt var., C. insigne varieties, C. × Charles Richman, C. × Lathamianum giganteum, Dendrobium formosum giganteum, D. Phalænopsis, Cattleya Dowiana aurea, C. D. chrysotoxa, C. labiata varieties, C. × Mantinii nobilior, Vanda cœrulea, Lælio-cattleyas, and other plants.

Messrs. Hugh Low & Co., Bush Hill Park, staged a good group, containing Warscewiczella velata, Miltonia × Binoti, Odontoglossum grande, some good varieties of Cattleya labiata, including the white-petalled var. G. G. Whitelegge, C. × Mantinii, and other good things. A Silver Banksian Medal was awarded.

M. A. A. Peeters, Brussels, sent the large and handsome Cattleya × Mantinii fastuosa, C. × Hardyana alba, and C. labiata Peeters' variety. The last, a remarkably handsome variety, having the flowers almost uniformly rose-purple, streaked with white, received a First-class Certificate.

Messrs. Edgar & Co., Montrose, South Woodford, staged a good group.

Messrs. Heath & Son, Cheltenham, showed a small group of Dendrobium Phalænopsis Statterianum, hybrid Cypripediums, Lælio-cattleya bletchleyensis, and other plants.

Messrs. Lager & Hurrell, Summit, New Jersey, U.S.A., exhibited Cattleya × Ballantiniana.

Mr. J. E. Sadler, Beedon, Newbury, Berkshire, sent Cypripedium × Germaine Opoix var. Gaston Bultel, a large and well-shaped flower which is figured at page 137 of our last volume.

DIPLOMA AWARDS.

THE subjects of the special competition on this date were Lælia pumila, L. Dayana, and Cattleya Dowiana, with their hybrids, and the following awards were made:—

LÆLIA PUMILA.—First Diploma to L. pumila superba; Second Diploma to L. pumila Gatton Park var., both from Jeremiah Colman, Esq.

CATTLEYA DOWIANA.—First Diploma to C. Dowiana aurea Westfield Beauty, from Francis Wellesley, Esq. It is a charming light yellow form, mottled with rose at the margin, and the lip claret purple, veined with yellow to within half an inch of the apex.

C. DOWIANA HYBRIDS.—First Diploma to Cattleya × Octave Doin var. Herbert Goodson, from H. S. Goodson, Esq.: Second Diploma to C. × Mantinii superba, from Jeremiah Colman, Esq.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A meeting of this Society was held at the Coal Exchange, Manchester, on October 11th, when there was a fine display of plants, and the awards included five Medals, five Awards of Merit. and two Cultural Certificates. The members of the Committee present were:—E. Ashworth, Esq., Chairman, and Messrs. R. Ashworth, F. Sander, H. Thorp, A. J. Keeling, E. Rogers, A. Warburton, W. Stevens, Dr. Ritchie, J. Cypher, J. C. Cowan, F. Ashton, C. Parker, J. E. Williamson, and P. Weathers (Hon. Sec.).

W. Thompson, Esq , Stone (gr. Mr. Stevens), received a Silver Medal for a choice group, a Cultural Certificate for Odontoglossum crispum var. Belle, and Awards of Merit for C. × Rolfeæ var. leopardinum, Cypripedium × Cybele Walton var., and C. × Nora (tonsum × Harrisianum).

W. Laverton, Esq., Nantwich (gr. Mr. Smith), staged an interesting group, to which a Bronze Medal was given.

G. W. Jessop, Esq., Leeds, obtained a Vote of Thanks for an interesting group, and an Award of Merit for the handsome Aërides Lawrenceanum.

A. J. Oakshott, Esq., received a Cultural Certificate for Odontoglossum grande.

Messrs. James Cypher & Sons, Cheltenham, staged a bright and attractive group, which received a Silver Medal, while an Award of Merit was given to Burlingtonia candida var. gigantea.

Messrs. A. J. Keeling & Sons and Mr. W. B. Upjohn each received a Bronze Medal, while Mr. D. McLeod and Messrs. J. W. Moore were accorded Votes of Thanks, for interesting groups.

CATTLEYA × LUCIENIANA.

WHEN writing my recent notes on the above (pp. 208, 251) I overlooked, as I am reminded by Mr. Crawshay, another hybrid said to have the same parentage, namely, Cattleya × Pittiæ, which received a First-class Certificate from the R.H.S. on May 23rd, 1905, when exhibited by H. T. Pitt, Esq. It was described as "a handsome thing, having purple-rose undulate sepals and petals, with a few brown spots, and a whitish lip closely striated with dark rose" (*O. R.* xiii. p. 171). It is not stated whether it is a natural or an artificial hybrid, nor is there any further clue as to its history, though presumably this could be traced. If a natural hybrid, it may have come out of the same importation as one of those previously mentioned as C. × Lucieniana, and at all events may be considered as a form of it from the same district. It would be interesting to have this point cleared up.

R. A. R.

CATTLEYA × BROWNIÆ.

THE annexed figure represents a beautiful flower of Cattleya × Browniæ (Bowringiana × Harrisoniana), being reproduced, life size, from a photograph, taken by Mr. W. P. Bound, of a seedling raised in the collection of Jeremiah Colman, Esq., Gatton Park, Reigate. It is a very attractive hybrid, of excellent shape, having rosy purple sepals and petals, and a rather darker, very undulate, nearly entire lip, with some light yellow on the disc. C. × Browniæ was originally raised by Messrs. Sander and Sons, from C. Harrisoniana ♀ and C. Bowringiana ♂, and received an Award of Merit

Fig. 45. CATTLEYA × BROWNIÆ.

from the R.H.S. on October 9th, 1894, at which time it was described in these pages (*O.R.* ii. p. 334). It was dedicated to the wife of D. S. Brown, Esq., of St. Louis, Missouri, U.S.A. Mr. Bound's seedling appears to have been derived from the reverse cross.

The hybrids of C. Bowringiana are becoming rather numerous, and form a very useful group for autumn blooming, as they retain the vigorous habit and floriferousness of that parent, with an enlarged size, and frequently an improvement in colour, in the flower.

ORCHIDS FOR AMATEURS.

IT has several times been suggested that an Amateur's page would be an acceptable feature of the *Review*, this being specially devoted to those who have only a small house, and attend to their plants for the most part themselves. If some amateur of this kind who has gained sufficient experience could be induced to conduct such a page its success would probably be assured. But the most experienced were beginners once, and although the writer long ago passed the initiatory stage, he will endeavour to keep in view those early days in writing the following notes for beginners in Orchid culture.

There is no need to dilate on their beauty and attractiveness, for these are already known, and there are few possessors of a glass house who have not at some time or other wished to try their hand at this fascinating family of plants, but have hesitated, perhaps, because of the supposed difficulties in their culture, or because they were thought to be very expensive plants to grow. The former point has sometimes been unduly magnified, especially when, as sometimes happens, a few Orchids have been introduced among ordinary greenhouse plants, and have not fulfilled expectations. The fact is the two require somewhat different treatment, and the conditions of the house can hardly be arranged to suit both at the same time.

Nor is there in most cases any need to build a special Orchid house, if there is already some house that can be adapted to the purpose. Orchids may be grown successfully in a house of almost any shape, height, or aspect, if it is properly shaded and ventilated. Of course there must be some means of heating it when required, and these three essentials being secured the rest is easy. The secret of successful Orchid culture is the provision of a suitable atmosphere, and it has been maintained that an Orchid grower can tell when the conditions are suitable by its effect on himself on entering the house. This, however, is probably the result of experience, and the beginner will be well advised if he keeps a sharp eye on the thermometer, the shading, and the arrangements for keeping a suitably moist atmosphere.

One of the first points in converting an ordinary greenhouse into an Orchid house is to see that the ventilators, top and bottom, are arranged so that an even temperature can be secured. The top ventilators should be in the highest part of the roof, and the bottom as near the ground as possible, say within a foot from the floor. Side ventilators on a level with the stages are unsuitable for Orchids, and any such should be permanently fastened up, and replaced by ventilating traps near the ground, as recommended. Next attend to the shading. Movable blinds should be

employed. Permanent shading painted on the glass is bad, because it cuts off the light in dull weather when its presence is beneficial. Lath roller blinds are the most suitable, and those on the roof should run on supports well above the glass, so as to allow a free current of air beneath. These blinds must be let down whenever the sun is powerful enough to injure the foliage, from spring to autumn. Next comes the provision for watering and damping down, and for the former a good rain-water tank within the house is almost indispensable, because the water is then of about the same temperature as the atmosphere, and soft water only should be used. Hard water might be used for damping the floors, walls, &c., in time of scarcity. These arrangements being made, the grower will be able to control the temperature and moisture of the atmosphere at all seasons in accordance with the requirements of the plants.

Now comes the provision of a suitable staging, but first we may consider what are the best plants to grow, and here one has to be guided largely by circumstances, though the question of individual tastes also comes in. A single house will generally be a Cool house, but if it can be divided by a glass partition, and the piping arranged so that one half can be kept a few degrees warmer than the other it will give a wider choice of varieties. It is a good plan to commence with established plants if possible, as there is the greater probability of their continuing to progress, and it is well not to attempt too many kinds at first.

Odontoglossums may be mentioned first, as the most popular of Cool house Orchids, and the most suitable kinds will include O. crispum, Pescatorei, triumphans, luteo-purpureum, Hallii, cirrhosum, Rossii, and Cervantesii, any or all of them, and a few others might easily be included. Cypripediums should include C. insigne and any of its varieties that can be secured, C. Spicerianum, Charlesworthii, and villosum, with the hybrids C. × nitens and C. × Leeanum. Masdevallias will include M. Veitchiana and M. coccinea varieties, and Oncidiums, O. tigrinum, O. macranthum, and O. varicosum. A few other showy and easily-grown kinds include the brilliant Sophronitis grandiflora, Epidendrum vitellinum, Ada aurantiaca, Cœlogyne cristata, Lælia pumila and L. Dayana, Anguloa Clowesii, Lycaste Skinneri and L. cruenta, Cymbidium Lowianum, Zygopetalum intermedium, Maxillaria grandiflora, and Dendrobium Jamesianum. Such a selection will yield a fine display of bloom, and a good succession, too, if fairly treated. With the warmer division also available the following others may be included:—Cattleya labiata, Mossiæ, Mendelii, Loddigesii, intermedia, Skinneri, and citrina, Lælia purpurata, anceps and autumnalis, a few of the Lælio-cattleyas, Cymbidium eburneum, Miltonia vexillaria, Odontoglossum citrosmum, Sobralia macrantha and xantholeuca, and Dendrobium thyrsiflorum, nobile and Wardianum.

A.

ORCHIDS IN SEASON.

A REMARKABLY fine form of Cattleya × Mrs. J. W. Whiteley is sent from the collection of G. H. Peace, Esq., Monton Grange, Eccles, near Manchester. The plant is said to have been bought as an unflowered hybrid from C. Bowringiana × Hardyana, and to resemble the seed parent in habit. The first spike produced two flowers, one of which is sent. The petals are over two inches broad and have a total expanse of 6½ inches, their colour being brilliant rose-purple. The front lobe of the lip is a shade under two inches broad, undulate, and of the darkest purple-crimson, the rest being rather lighter, with a pair of large yellow blotches in the throat.

Flowers of four Paphiopedilum seedlings are sent from the collection of E. F. Clark, Esq., Chamounix, Teignmouth. Three are derived from P. Charlesworthii, though, unfortunately, in two cases there is a little doubt about the second parent. One is supposed to be P. Charlesworthii × Harrisianum, and thus would be a form of C. × bingleyense. This seems likely, for the petals and lip are light shining brown, and the hairs of the ovary well developed, though not nearly as long as in villosum. The dorsal sepal is reflexed at the sides, veined and prettily suffused with rose, while there is a similar tint at the apex of the petals, and on the broadly dilated staminode. A second is supposed to be P. × Swanianum × Charlesworthii, which is possible, as the hairs of the petals are rather long, and there is a certain resemblance to P. × Helen (Dayanum × Charlesworthii), though it is not so good in colour. It has flowered in the autumn of 1904 and 1905. A third is P. Charlesworthii × Lathamianum, and thus is a form of P. × Rappartii. It shows its origin very clearly, having a large, orbicular, strongly reflexed dorsal sepal, strongly suffused with rose, and showing a light purple median band, while the petals and lip are shining brown, and the staminode white, with a prominent yellow tooth in the centre. The fourth is a P. venustum cross, and P. × Lathamianum is supposed to have been the second parent, which seems likely from the white apex to the dorsal sepal, and the shining green and brown lip.

Flowers of the handsome Epidendrum atropurpureum are sent from the collection of Mrs. Fielden, Grimston Park, Tadcaster, by Mr. Clayton, who stated that the pseudobulbs were found among some plants of Cattleya Harrisoniana imported direct two or three years ago. The species is rather widely diffused, and the Brazilian form is known as var. Randii. Flowers of the Cattleya Harrisoniana are also enclosed.

A flower of Paphiopedilum × Krishna, noted at page 351 of our twelfth volume, is sent from the collection of F. H. Moore, Esq., Royal Infirmary, Liverpool. It was derived from P. tonsum and P. insigne Sanderæ, and has probably a more yellow ground colour than the original form, which we

have not seen. The flower is yellowish green, slightly suffused with purple, and dotted with brown on the lower part of the petals and the dorsal sepal, the margin of the latter being white. It may be called P. × Krishna var. Moorei.

Several very beautiful flowers are sent from the collection of J. H. Grogan, Esq., Slaney Park, Baltinglass (gr. Mr. Cooper). They are hybrids of Cattleya Bowringiana, which, like their parent, are very useful during the autumn. Two seedlings from Lælia Dayana × C. Bowringiana are forms of Lælio-cattleya Meteor, originally raised in the collection of C. L. N. Ingram, Esq., Godalming. They are fairly intermediate in character, but in one the dark lip of L. Dayana has come out in a very effective way. The others are the beautiful Cattleya × Mrs. J. W. Whiteley (× Hardyana ♂), C. × Clytie (velutina ♂), and C. × Rothwelliæ (Eldorado ♂). The latter is a seedling raised in the collection and now flowering for the first time, but of course is a form of the American hybrid mentioned, whose history was given at pp. 35, 43, of our tenth volume.

THE HYBRIDIST.

ODONTOGLOSSUM × UNA.—This is a very distinct and pretty hybrid, raised in the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks, from O. crispum ♀ × O. nevadense rosefieldiense ♂, and exhibited at the R.H.S. meeting on October 9th. Mr. Crawshay, in sending a flower, writes that it was the only seedling saved out of the pod, and that the cross was made seven and a quarter years ago. He also remarks that both plant and spike are most like the pollen parent, and the same might be said of the flower. The sepals are light brown, with a light yellow tip and margin, and the petals brown with an elongated yellow basal blotch divided by a brown line. The lip is light yellow, with several brown blotches round the crest, and the column wings very narrow and serrulate. It is the first hybrid from O. nevadense.

ODONTOGLOSSUM × URANIA.—Another very interesting hybrid raised by Mr. Crawshay, from O. crispum ♀ × cristatellum ♂. Mr. Crawshay remarks that the seed was sown in March, 1902, and the first spike has produced nine flowers, fairly intermediate in character. The ground colour of the flower is light yellow, with a largish brown blotch near the apex and another below the middle, and a few small blotches on the petals. The lip is rather narrow, and bears a spiny crest with a large dark brown blotch in front, and the column wings are well developed and denticulate. As in the case of O. × waltonense, the effect of the crispum influence has been to break up the solid brown blotches of the sepals more than might have been expected.

BRASSOCATTLEYA × DIGBYANO-FORBESII.—This very distinct and striking hybrid was exhibited at the R.H.S. meeting held on October 9th, by Major G. L. Holford, Westonbirt, Tetbury (gr. Mr. Alexander). It is fairly intermediate in character, having oblong sepals and petals, 2½ inches long, pale greenish in colour, and a broad, strongly 3-lobed, fringed lip o similar tint, with a slight suffusion of pink and a few purple streaks on the disc. The Forbesii character comes out very strongly in the lip, and the hybrid is very distinct from those derived from the labiata group of Cattleyas.

LÆLIO-CATTLEYA PERRILOSA.—A hybrid raised in the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, from Lælia Perrinii ♀ and Cattleya granulosa ♂, which was exhibited at the R.H.S meeting on October 9th last. A flower sent by Mr. Smith shows that the hybrid has retained largely the shape of the pollen parent, with a more membranous texture and different colour. The sepals and petals are light purple, 2½ inches long, and the lip very strongly three-lobed, with whitish side lobes, and an unguiculate, suborbicular front lobe about an inch broad.

LÆLIO-CATTLEYA TENEGOTTOI.—This was purchased as a seedling from Lælia tenebrosa × Lælio-cattleya Gottoiana, but otherwise has the same history as the preceding. The flower is most comparable with L.-c. Gottoiana, being large, and rosy purple, with a darker entire lip, and a pair of faint yellow eyes in the throat. The pollen parent is a natural hybrid between Lælia tenebrosa and Cattleya Warneri, and, assuming the parentage to be correctly recorded, the influence of the original Cattleya parentage is retained more than might have been anticipated.

CYPRIPEDIUM × DISCOLOR.

IT may be remembered that when writing an account of Mr. Warner's hybrid Cypripedes (*O.R.* xiii. p. 292) we remarked that C. × discolor appeared to have been completely lost sight of, in reply to which the late Mr. Reginald Young wrote that he had the plant, and promised to send a flower at the first opportunity (l.c. p. 349). The promise has been carried out by Mrs. Young, who has kindly sent a flower and leaf. As this is the only one of the series which has not been figured, a short description may be interesting. It shows very clearly its C. venustum origin, and the leaf agrees better with that parent than do any of the others, as it is completely marbled with purple spots beneath, while the upper surface is dull glaucous green, rather dark in colour, with traces of the typical venustum markings. The flower is most comparable with C. × chloroneurum, but is much darker. The dorsal sepal is ovate, somewhat reflexed at the sides, an inch and a half long, with about fifteen very dark purple bands, which

become green at the apex and extreme base. The ground colour is white at the apex, while the lower half is suffused with brown. The petals have much of the venustum character, being spreading, 2¼ inches long, and shining copper-purple at the apex, with darker veins, which become light green at the base, and there are about twenty small dark spots on the upper side of the basal half. The lip is suffused with purple brown in front, but otherwise much as in C. venustum. The scape is dark purple in colour, and more villous than in C. venustum, and it is pretty clear in this case, too, that C. × Harrisianum was the second parent. It is interesting to be able to compare this plant with the others, and as it was purchased from Mr. B. S. Williams in November, 1889, it is evidently authentic.

NOTES.

Two meetings of the R.H.S. will be held at the Royal Horticultural Hall, Vincent-square, Westminster, during November, on the 6th and 20th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon. The subjects for the Special Diploma Competition are as follows:—Nov. 6th, Dendrobium Phalænopsis, Cattleya labiata, and Sophronitis grandiflora, with their respective hybrids; Nov. 20th, Cypripedium Fairrieanum and its hybrids.

The Manchester and North of England Orchid Society will hold meetings in the Coal Exchange, Manchester, on November 8th and 22nd. The Committee meets at noon and the exhibits are open to inspection from 1 to 3 o'clock p.m.

With reference to the seedling Odontoglossum × Humeanum, mentioned on page 299, Mr. F. H. Moore writes, from Liverpool, to say that he has now fat capsules on Odontoglossum citrosmum × cordatum and the reverse cross, also O. citrosmum on O. maculatum, and a nice batch of seedlings of Dendrobium Devonianum × D. nobile Heathii. All are interesting, and the success of the latter should be insured. We have no record of another cross with D. Devonianum.

A recent issue of the *Proceedings of the Biological Society of Washington* contains (vol. xi. pp. 143-153) descriptions of eighteen new Philippine species of Acoridium, by Mr. Oakes Ames. They will be illustrated in the work, Orchidaceæ, being issued from the Ames Botanical Laboratory. The species of this genus seem to be particularly numerous in the Philippines.

MESSRS. JAMES VEITCH & SONS, LTD.—We regret to learn that the illness of Mr. James H. Veitch necessitates his relinquishing active work indefinitely. Mr. Harry J. Veitch, who was for so many years head of the

firm, but retired some years since, has again returned to the position of managing director.

Writing on the question of the somewhat indefinite colouring seen in many hybrids as mentioned by Mr. Black at page 310, a correspondent writes:—"I have never been a great admirer of hybrids, holding that, as a rule, one or the other parent is superior in beauty to the offspring, but admitting that there are some *very* important exceptions."

And he adds:—"I should like to see those who now hybridise turn their attention to species, and try to raise Cattleya Trianæ, C. Mossiæ, Lælia purpurata, and others, from parents of the best forms. I believe that this would pay in the long run, and perhaps better than hybrids."

ORCHID PORTRAITS.

BULBOPHYLLUM VIRESCENS, J. J. Smith.—*Gard. Chron.*, 1906, ii. p. 261, with suppl. plate.

CATTLEYA DOWIANA ROSITA.—*Journ. Hort.*, 1906, ii. p. 388, with fig.

CHLORÆA VIRESCENS, Lindl.—*Bot. Mag.*, t. 8100.

CYMBIDIUM ERYTHROSTYLUM, Rolfe.—*Gard. Chron.*, 1906, ii. p. 286, fig. 115; *Journ. Hort.*, 1906, i. p. 361, with fig.; *Gard. Mag.*, 1906, pp. 697, 711, with fig.

CYMBIDIUM LOWIANUM.—*Journ. Hort.*, 1906, ii. pp. 316, 317, with fig.

CYPRIPEDIUM × FLETCHERIANUM.—*Gard. Chron.*, 1906, ii. p. 254, fig. 103; *Journ. Hort.*, 1906, ii. p. 339, with fig.

LÆLIO-CATTLEYA BLETCHLEYENSIS.—*Gartenfl.*, 1906, p. 505, t. 1555.

ODONTOGLOSSUM CRISPUM ILLUSTRATUM.—*Gard. World*, 1906, p. 749 with fig.

ODONTOGLOSSUM NÆVIUM, Lindl.—*Bot. Mag.*, t. 8097.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired* (*abroad, reply postcards should be used*). *Subjects of special interest will be dealt with in the body of the work*].

H. J. C. Epidendrum atropurpureum.

J. F. S. Duly received, but too late for present issue.

G. H. J., J. W. M. Unavoidably postponed till next month.

J. M. Received with thanks.

F. B. We have already a very much longer list.

Photographs received with thanks.—J. G., E. A., F. W., A. D.

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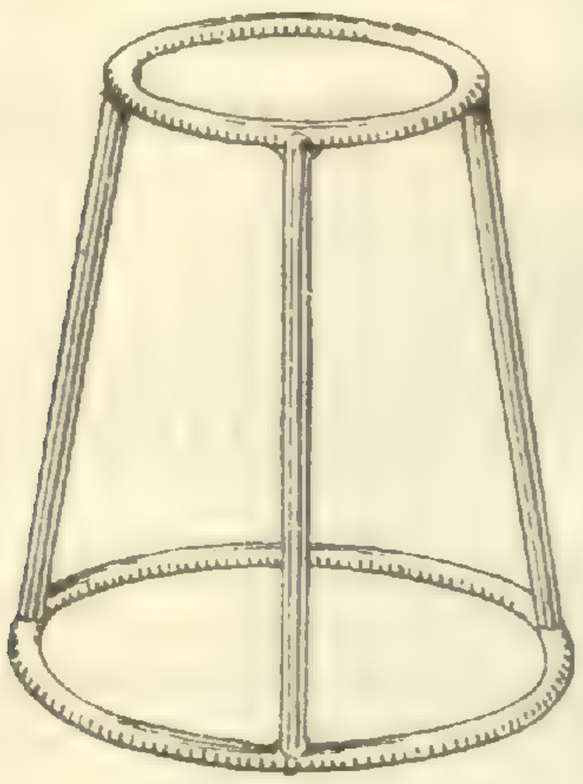

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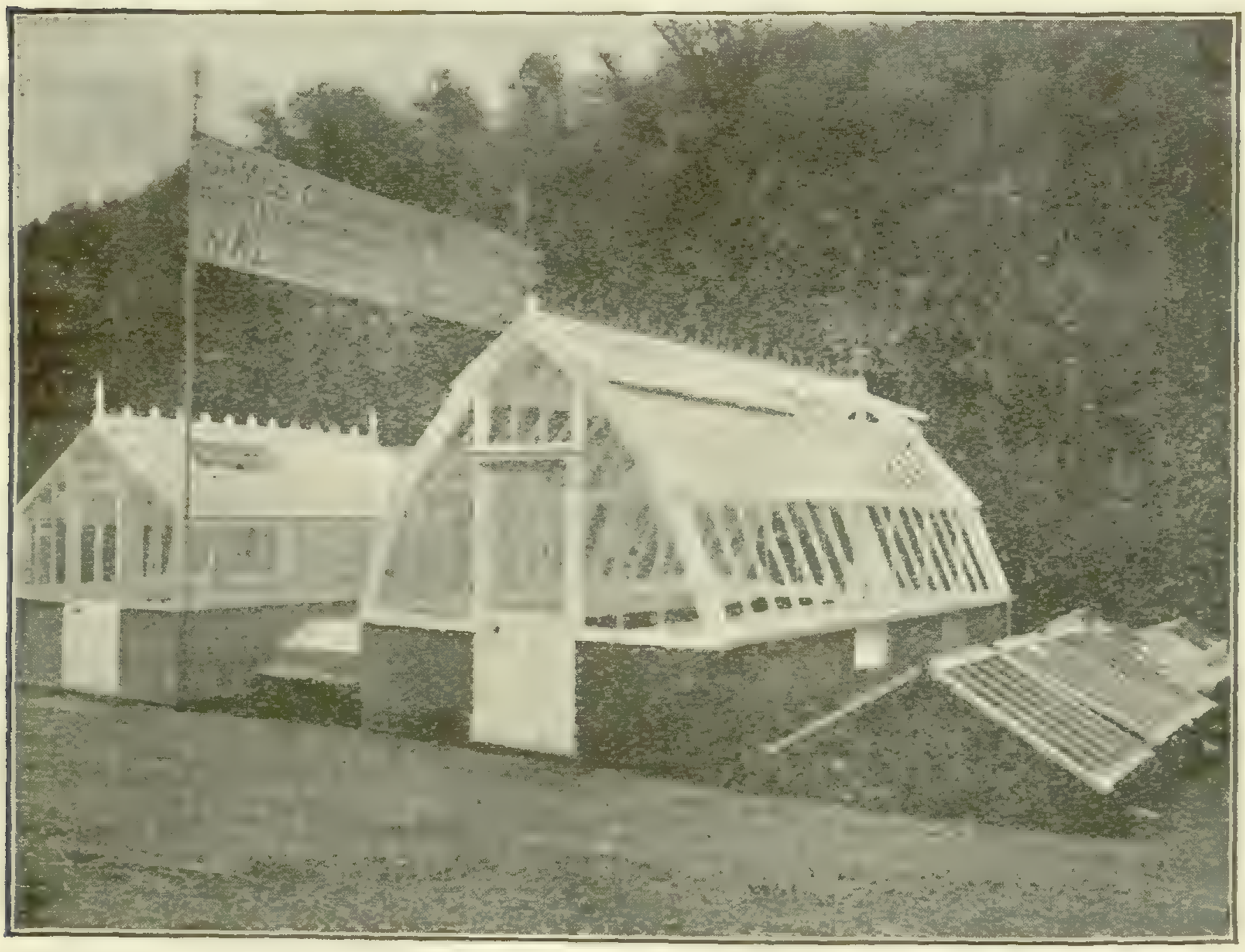

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An Illustrated Monthly Journal of Orchidology.

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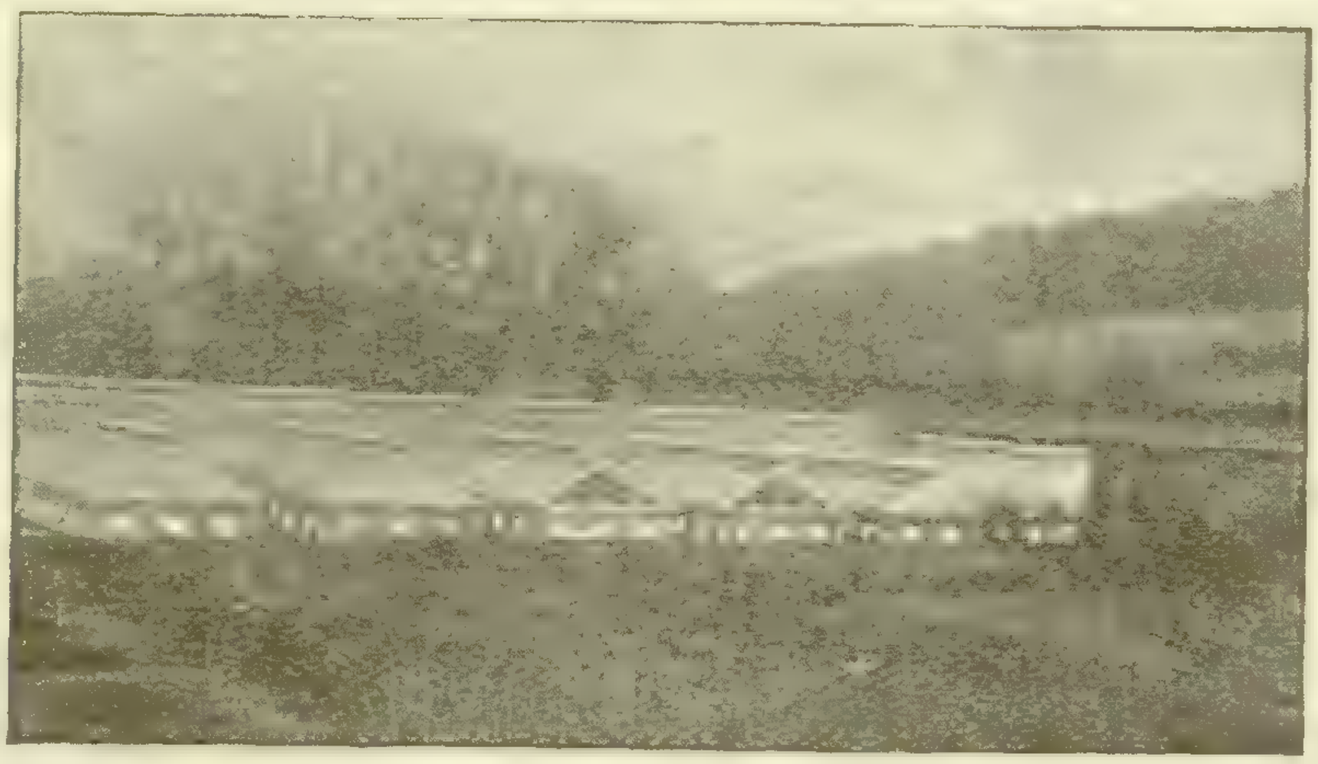

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THE ORCHID REVIEW.

VOL. XIV.] *DECEMBER*, 1906. [No. 168.

ORCHIDS AT FAIRLAWN, WEST HILL, PUTNEY.

THE collection of Orchids formed by H. S. Goodson, Esq., at Fairlawn, West Hill, Putney, is now five or six years old, but, although young, it is one which is well known throughout the country, as Mr. Goodson has been a frequent and most successful exhibitor at the meetings of the R.H.S., and the collection is rich in certificated plants, more particularly in Cattleyas and Lælio-cattleyas, although other classes have also had a large share of recognition. The collection is at present contained in four houses, all span roofed, with centre and side-staging, and if any fault can be found with these, it is that they do not run consistently due North and South, but are of different aspects. The plants, however, seem perfectly happy, in many instances being exceptionally vigorous, giving strong evidence that their wants are well understood by Mr. G. Day, who has charge of them, and who is an intelligent and thoroughly experienced Orchid grower.

The first house under notice is chiefly filled with Cypripediums and Dendrobiums, the former occupying the side staging, while the latter are arranged on the centre one. In this house were noted some good specimens of C. × Morganiæ and, at the warmer end, C. Rothschildianum. In flower were Selenipediums × Sedeni candidulum and × calurum, and there was also a batch of Cypripedium Spicerianum in flower and bud, which showed a considerable range of variety. There was also in flower a dark C. purpuratum, while a nice batch of Calanthes were throwing up their spikes, and promising well. A partition has been thrown across the end of this house, and in the small division thus formed there have been placed hot cases, in which efforts are being made to raise seedlings, and already some success has been achieved in this direction, a nice little lot of Lælio-cattleyas having been potted off. The Dendrobiums are a nice representative lot, including × Juno, × melanodiscus, × Ainsworthii, and most of the best known hybrids and species, but Mr. Day finds some difficulty under their present arrangement in giving them the necessary amount of light during the summer without injuring the Cypripediums.

The next house entered is filled with Cattleyas, Lælio-cattleyas &c., the

roof as well as the staging being pretty well packed, and it will be possible to note only a few of these. C. Harrisoniana var. H. S. Goodson, a very fine rich variety, was carrying a pod, C. Schilleriana having been selected as the pollen parent. This will make a very lovely hybrid. Hanging from the roof was a nice thriving batch of Cypripedium Godefroyæ leucochilum, among which was Goodson's var., which received an Award of Merit this year. Albino Cattleyas and Lælias are well represented, and the following were noted in good condition in this house: L. majalis alba, C. Eldorado alba, C. Gaskelliana alba, C. Mossiæ Wageneri Goodson's var., now cut up into three plants, and all doing well; C. intermedia alba (12 plants), also nice batches of C. i. nivea, C. i. carnea, &c. At the far end of this house were a number of hybrid Phaius, including P. × Norman, P. × Cooksoni, &c., also P. Blumei Sanderianus. Next to these were a lot of Sobralias, of which S. macrantha Kienastiana and S. × Veitchii might be mentioned. Cattleya Mossiæ Mrs. A. Goodson was pointed out in a prosperous condition. This remarkable, mottled variety received an Award of Merit in June last. It is most distinct, the only other variety of C. Mossiæ which I can recall being in any way like it is C. Mossiæ Hardyana, which, however, is only mottled on the petals. C. Mossiæ Reineckeana and C. M. "The Pearl," said to be slate coloured, Lælio-cattleya × Massangeana var. Harry Goodson, an A. M. var., and a host of other good things were also pointed out in this house. Among plants in flower were remarked C. × Mrs. J. W. Whiteley, and some C. labiata, one of which had slate tinted sepals and petals, with a triangular blue blotch on the lip.

The third house is also devoted largely to Cattleya and Lælio-cattleyas, the centre staging and roof being full of these, while a large share of the side staging is devoted to Cypripediums, which include a good selection of the best, both species and hybrids. Here, again, it will only be possible to take a hasty survey. The month of October is not the best season to see things in flower, but there was a really splendid show in this house, the C. Bowringiana hybrids being especially to the front. These hybrids seem to be endowed with a remarkably fine constitution, and are particularly well adapted for forming specimens, from the free way in which they multiply their leaves. One specimen, C. × Mantinii, here had six sheaths. An exceedingly fine variety of C. × Mantinii, flowering off a small bulb for the first time, had just opened on the day of my visit. The flower took more after the build of the C. aurea than is usual, was large and of excellent colour. I think it may be heard of again. Several plants of the Lælia Perrinii hybrids, L.-c. Lady Rothschild and Decia, were in flower; also many plants of Cattleya × Portia, × John Baguley, and the other hybrids having Bowringiana for a parent, L.-c. bletchleyensis, &c., Brasso-cattleya King Haakon the 2nd, L.-c. Issy var. cuprea (A.M. 1905), C.

Mendelii, H. A. Tracy (A.M. var.), C. Mendelii Herbert Goodson, C. × Hardyana, and numberless other plants of great merit were noted in this house, out of flower.

The Cypripediums are a choice and flourishing lot. In flower were C. insigne Sanderæ, × Mme. Jules Hye, a fine var. of C. × Maudiæ, × Sallieri Hyeanum, × Leeanum Albertianum, × œnanthum superbum, two unnamed hybrids, &c., while out of flower or in bud, mention might be made of C. callosum Sanderæ, × Annie Goodson (ciliolare × Charlesworthii), insigne Harefield Hall var., i. Dorothy, × Baron Schröder, and others too numerous to mention. Hanging from the roof were four nice plants of Cymbidium Huttoni. These were tried in the Odontoglossum house, but Mr. Day found that the foliage began to show signs of bad health, and he is satisfied that the Cattleya house temperature suits them best. There is a pathetic reference to this plant in *Hortus Veitchii*: "A rare and remarkable species sent from Java by the unfortunate Henry Hutton, in commemoration of whose labours and early death it is named." As Hutton died in Java after sending this and other plants home, the naming of it after him would be a posthumous honour. There was also a nice few plants of Laelia Jongheana suspended near the door in this house, including the very rare and beautiful var. alba.

The Odontoglossum house is 50-60 ft. long and 20 ft. wide, and there are accommodated here some 5,000 plants of Odontoglossum crispum, besides a large number of other things. Only ten per cent. or less of these have yet flowered, and—so we are told—as the greatest pleasure is in anticipation, Mr. Goodson is passing through that blissful period at present, for have we not here a house 90 per cent. full of it! I am assured that the Odontoglossums have come from the right source, and, although so far nothing extraordinary has happened, one has every reason to be hopeful. The plants are now getting well established, and are promising exceedingly well, and should make a very fine display next May. Standing along the top of the centre staging were a row of Cymbidiums, which were throwing up very fine spikes, one C. Tracyanum promising, in particular, a wonderful inflorescence when developed. Among the Cymbidiums were Lowianum giganteum, × Lowio-eburneum, × Lowio-grandiflorum (two), and an unflowered seedling Lowianum × Tracyanum, which should prove to be C. × I'Ansoni. Suspended from the roof were pans of Sophronitis grandiflora, Lælia pumila, Odontoglossum Cervantesii, O. Rossii, &c. Special plants pointed out were: O. × loochristiense, two plants of O. × ardentissimum, plants of O. × Adrianæ, O. × Hallio-crispum, O. ramosissimum, &c. This house was made quite bright by numbers of O. grande in flower, also Oncidium Forbesii, O. cucullatum, a number of Cypripedium insigne, &c. Two plants of Cypripedium Farrieanum in flower were remarkable for

the great difference in their shape and colour. This plant is being largely worked on at present by hybridists, and we shall in a short time see a wonderful series of fine hybrids from it, but it is to those who are selecting the fine varieties of it that most success will come.

In the conservatory attached to the house were quite a number of choice things in flower, the most noticeable being that splendid hybrid Cattleya × Octave Doin Goodson's variety, which had just received a First-class Certificate. There was also a most striking form of Brassocattleya Queen Alexandra, with fine, large, broad segments, and with little of the twist which is usually present in B. Digbyana hybrids, a finely grown and flowered Cypripedium × Chapmanii magnificum, and a score or two of other interesting and showy plants.

Mr. Goodson has had a number of his finer things painted, and instead of storing these away out of sight, he has had them framed and hung up in a small room. This is an admirable way of seeing them to advantage, only I believe there is a danger of the colour fading through exposure to light. Is this a very real danger?

A very large number of Mr. Goodson's plants have been bought in flower, and with regard to the Lælio-cattleyas, which form a considerable part of the collection, many will—good as they were when bought—have good prospects of improving; for we know that these are not often at their best the first, or even the second, time of flowering. There is also in the collection a considerable number of unflowered seedlings of various kinds, whose flowering will keep the interest awake.

Lastly, which is the best omen for the continued prosperity of this collection, there is, I think, the right spirit abroad. Mr. Goodson and his sons, Mr. Harry and Mr. Herbert Goodson, have all that intimate acquaintance with their plants which only a genuine interest can give, and with Mr. Day as an earnest and experienced grower, we find here a combination which augurs well for the advancement of this collection.

J. M. BLACK.

RULES OF BOTANICAL NOMENCLATURE.

AN International Botanical Congress was held at Vienna in 1905, for the discussion of the subject of Botanical Nomenclature and other important matters, and the Report has just been issued. It is notorious that some recent developments have led to serious inconvenience, for example, one industrious "reformer" found it "necessary" to change about thirty thousand plant names before reporting on his collection, and one object of the Congress was to draw up amended rules. These are now issued, in French, English, and German. These "International Rules for Botanical Nomenclature, chiefly of Vascular Plants," have been passed by the

Congress, and are of such importance to Orchidists (among others) that we feel justified in calling attention to some of the points agreed upon, as after careful perusal we believe that they will do away with some of the more objectionable of recent developments.

Article 1 points out that "Natural History can make no progress without a regular system of nomenclature, which is recognised and used by the great majority of naturalists in all countries."

Article 7 states :—"Scientific names are in Latin for all groups. When taken from another language, a Latin termination is given them, except in cases sanctioned by custom."

Article 17 remarks :—No one should change a name or a combination of names without serious motives, based on a more profound knowledge of the facts, or on the necessity of giving up a nomenclature that is contrary to rules."

Article 19 provides that "Botanical nomenclature begins with the *Species Plantarum* of Linnæus, ed. 1 (1753), for all groups of vascular plants." Exceptions, however, are allowed by Article 20 for names which have come into general use in the fifty years following their publication, or which have been used in Monographs and important works up to the year 1890. A list of these is given in an Appendix, and among them we find the following Orchids:—Dendrobium (not Callista or Ceraia), Saccolabium (not Gastrochilus), Bulbophyllum (not Phyllorkis or Phyllorchis), Calanthe (not Alismorkis or Aliismorchis), Eria (not Pinalia), Eulophia (not Graphorkis or Graphorchis), Polystachya (not Dendrorkis or Denrorchis), Spiranthes (not Gyrostachys or Ibidium), Stelis (not Humboldtia), Oberonia (not Iridorkis), Listera (not Diphryllum), Neottia (not Nidus), Liparis (not Leptorchis), Calopogon (not Cathea), Platanthera (not Lycias), Nervilia (not Stellorkis), Platylepis (not Erporkis or Erporchis), and Œonia (not Epidorkis). The significance of this exception will be apparent when it is stated that a notorious "reformer" has renamed the species of these familiar genera (and numerous others), replacing them by the obscure genera mentioned in brackets, which happen to be older, thus giving hundreds of useless new names.

Concerning generic and specific names we find some very useful recommendations, as, not to make names very long or difficult to pronounce, not to dedicate genera to persons who are strangers to natural science, and to avoid specific names formed of two words. We are also told that the specific names should, in general, give some indication of the appearance, the characters, the origin, the history and the properties of the species, or if taken from the name of a person it should recall the name of the one who discovered or described it, or who is in some way connected with it. Such specific names begin with a small letter, except when taken from the names

of persons, or from old generic names. Rules are also given for Latinising personal names.

Hybrids are to be designated by a formula, and whenever it seems useful or necessary by a name, the formula to consist of the specific names of the two parents in alphabetical order, connected by the sign ×. When a name is given it is subject to the same rules as names of species, but is distinguished by the addition of the sign " × " before the name. Forms and half-breeds among cultivated plants should receive fancy names in common language.

Article 36 provides that on and after January 1, 1908, the publication of new names will be valid only when they are accompanied by a Latin diagnosis.

Articles 48 and 49, refer to transfers of names, and it is provided (*inter alia*) that if a species is moved from one genus to another the original specific epithet should be retained, unless in the new position there remains some obstacle, as provided for in another section. Article 53, for example, provides that the specific name must be changed if it is already borne by a valid species in the new genus. We find this example given :—" Satyrium nigrum, L. *Sp. Pl.* ed. 1, 944 (1753), when placed in the genus Nigritella must be called Nigritella nigra, Reichb. f. *Ic. Fl. Germ. et Helv.* xiv. 102 (1851), not Nigritella angustifolia, Rich. in *Mem. Mus. Par.* iv. 56 (1818)." If, however, the transfer involves a change of rank (as a variety raised to the rank of a species, or the reverse) the earliest name in accordance with its new position must be retained. It is, however, recommended that the original epithet should be retained or re-established whenever possible.

Article 51 remarks that " Everyone should refuse to admit a name . . . when it is based on a monstrosity, or when it becomes a permanent source of confusion or error," and the example is given :—" The genus Uropedium, Lindl., was based on a monstrosity which is now referred to Phragmopedilum caudatum, Rolfe."

Article 55 provides that "Specific names must be rejected . . . when they merely repeat the generic name," and this gets rid of such absurdities as Corallorhiza Corallorhiza to designate the well-known Corallorhiza innata.

Article 57 permits the correction of any typographic or orthographic error, and thus Paphiopedilum Fairrieanum, not P. Fairieanum, is the correct name of a now familiar species.

Lastly, Article 58 states :—" The rules of botanical nomenclature can only be modified by competent persons at an international Congress convened for the express purpose.

In an appendix we find recommendations for the use of Latin or Latinised scientific names in preference to others, and for the use of the metric system.

ORCHIDS AT WILDERSPOOL, WARRINGTON.

IT will be remembered that our January issue contained an account, by Mr. H. Thorpe, of the fine collection of Orchids of William Bolton, Esq., at Wilderspool, Warrington (pp. 3-6). Mr. Crawshay has recently visited the collection and has recorded his impressions (*Gard. Chron.* 1906, ii. pp. 317, 318), and the opinions of such a keen grower of Odontoglossums are interesting. Mr. Crawshay remarks:—"Speaking of the plants generally, I may say they are growing like weeds, and particularising, I wish to commend the details of the Odontoglossum growing to the careful consideration of all who specialise in this genus, which has now *par excellence* become the most highly valued of all genera of Orchids."

After a note on the situation, he proceeds:—"The Odontoglossum houses are somewhat unique, as the following description will prove. You enter a central corridor 70 feet long by 4 feet wide and 9 feet high, which runs north and south. Running east and west of it are four pairs of span roof houses 55 feet long, 12 feet wide, and 8 feet high to the ridge inside, separated by spaces of 3 feet; the ends are all free, there being no doors in them. At the end of the corridor there is one house (which is equal to one of the pairs) having no door opposite the end of the corridor.

"The ventilation of these houses is remarkable, for at first sight there appears to be none at all, as there are *neither top lights nor side wall ventilators* to open at all. The ventilation is gained by a few panes of glass being open at the ends, and the use of *only two* doors from the corridor into the spaces between the houses, but there are no doors from the corridor into the houses themselves to control the admission of air if the space doors are opened. These space doors do not allow of much ventilation, being only two, one on each side of the corridor, not opposite each other, but if opened for any cause, of course, there is an inlet of air, but this is not the usual course practiced for ventilating purposes.

"The heating is also remarkable, being one 8-inch pipe under each side stage, a thing I have never seen before in any Orchid-growing establishment. The stages are 3 feet 9 inches wide, and only two feet from the ground, which has nothing of any sort on it; it is bare, to exhale anything which Nature may have put into it or drain off the water from the stages." The stages are lower than in any establishment which Mr. Crawshay has seen.

"The plants stand directly on the slate stages, which are covered 1 to 2 inches deep in cinders crushed to the size of large peas or beans The side walls of the house are 3 feet high, and are 1 foot above the stage level. From that height the roof runs to the ridge. The shading is one ordinary lath blind, and the hot water has this year been in disuse from

May to the end of September. Tanks, as usual, are under the stages, and small iron cisterns placed along the paths, to dip the can into, complete this most successful group of houses.

"The potting compost used is oak leaves and sphagnum in equal parts; the leaves are gathered in autumn from the woods and kept in the open under a little shed; they are used after rubbing through a half inch sieve. To this mixture is added about one-sixth silver sand, and into that go the plants with no drainage of either crocks or rhizomes. Out of that compost come plants that are as good as man can wish for, and into the pot go the roots in great quantity and in quality, such as no man can wish for better.

"There are some 80,000 Odontoglossums, and in some of the houses are a few of the old *régime* still hanging up on the roof in the moss (alone) that used to be the order of the day then. You do not need to look at them more than once to see the benefit of the new treatment, under which they are all going the same way, viz., from little plants into big ones.

"The largest crispums and luteos are a sight to see, immense growths coming up everywhere and double breaks in quantity. To particularise them would be a positive labour; I measured one luteopurpureum growth of 2¼ inches wide at base and 18 inches high, and the bulb had only just began to form. Of these there are 30 plants in 8 to 12-inch pots, a couple of which have three heads. Large crispum plants are here by hundreds."

After mentioning some of the fine varieties of crispum grown, also O. × Wilckeanum Stevensii, "under its second name of crispum Alpha (kept on it to mark its origin)," Mr. Crawshay proceeds:—"Garden hybrids are here by the hundred, and rapid propagation of these is being practiced, for it is found that they are in increasing demand annually, and Mr. Bolton is not afraid of their value falling to bed-rock level, as some people fear they will. Of course, as is well known, these garden hybrids grow themselves, but they do not always succeed in dividing themselves, so that each plant makes two of the same size, as will shortly be the case here.

"The change in the quality of the growth is one of the most remarkable things I have seen in Orchid culture in so short a time, and if it continues upon its present lines (I see no reason why it should not) Wilderspool will be one of the sights of the North."

Mr. Crawshay concludes with a note on Cypripedium, remarking that the insigne and bellatulum sections do well at Wilderspool. "Of insigne Sanderæ there are some 500 plants, many dozens of them being in 8 to 10-inch pots, and with a dozen growths or more. They grow like Tradescantia, under a damp stage, and it is no trouble to propagate them as fast as may be desired. When in bloom this house will be an extraordinary sight indeed, and well worth a journey to see them alone. C. Fairrieanum is here in hundreds, and at present seems to like a coolish treatment."

LÆLIO-CATTLEYA STATTERIANA OCULATA.

THE annexed figure represents a very beautiful form of Lælio-cattleya Statteriana (L. Perrinii ♀ × C. labiata ♂), from the collection of T. L. Mead, Esq., Oviedo, Florida. The original form was raised by Messrs. James Veitch and Sons, in whose establishment, at Chelsea, it flowered for the first time in October, 1893, when it received a First-class Certificate

Fig. 46. LÆLIO-CATTLEYA × STATTERIANA OCULATA.

from the R.H.S. (*O.R.* i. p. 375). The variety oculata differs in having a pair of purple eye-like blotches near the base of the lip, which are just visible in the figure, though less distinct than in the beautifully tinted original sent by Mr. Mead, which shows the flower 6¾ inches broad across the petals. The figure is reduced. The throat of the lip is whitish, with a deep purple blotch in front, and the rest of the flower rosy lilac. It is certainly a very handsome hybrid.

SOCIETIES.

ROYAL HORTICULTURAL.

A MEETING of the R.H.S. was held at the Royal Horticultural Hall, Vincent Square, Westminster, on November 6th, when there was a remarkable display of Orchids—one of the finest yet seen in the Hall—and the awards consisted of two gold and nine other Medals, four First-class Certificates, seven Awards of Merit, four Cultural Commendations, and three Botanical Certificates.

J. Bradshaw, Esq., Southgate (gr. Mr. Whitelegge), staged a remarkably fine group, to which the Society's Gold Medal was awarded. It contained a fine series of Cattleya labiata, the centre being formed of the white varieties, alba, Amesiæ, Daphne, G. G. Whitelegge, Lowiæ, Penelope and R. I. Measures, while the best of the coloured forms, called Hector and Hercules, were excellent in every respect. On either side of these were arranged a fine series of C. × Mantinii, C. × Mrs. J. W. Whiteley, C. × Fabia with its variety alba, C. Dowiana Rosita, and some fine Lælio-cattleyas, of which L.-c. Decia alba and L.-c. Haroldiana var. John Bradshaw were specially noteworthy. The handsome white Brassocattleya Queen Alexandra, Odontoglossum Lindenii, the beautiful yellow Oncidium Forbesii Bradshawiæ, and other choice things were also included. A Cultural Commendation was given to a remarkably fine specimen of Cattleya × Mantinii, and an Award of Merit to C. × Fabia Bradshawiana, a fine and very richly coloured variety.

G. F. Moore, Esq., Bourton-on-the-Water (gr. Mr. Page), also received a Gold Medal for a very large and tastefully arranged group. The centre was made up of good specimens of Oncidium varicosum and other graceful species, with groups of Dendrobium Phalænopsis in variety on either side, these including the beautiful white variety hololeuca and the blush Miss Louisa Deane. There were also some good D. superbiens and D. bigibbum, fine forms of Cypripedium insigne, C. × Maudiæ, C. × Evenor, C. × Olivia, and numerous other good things, also a selection of Cypripedium Fairrieanum and its hybrids.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen (gr. Mr. Young), received a Silver Flora Medal for a choice group, including the richly coloured Sophrocattleya Veitchii, Odontoglossum Uroskinneri splendens, Miltonia × Bleuana, Our Queen, a delicately tinted variety, Cypripedium insigne Harefield Hall var., C. Fairrieanum, and a good selection of others, with some good Cattleya × Fabia (labiata × Dowiana aurea), one of which, called C. × Fabia superba, received a First-class Certificate. It was a fine variety, of excellent shape, and very dark in colour, the rich purple-crimson lip having some golden veining at the base.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), also received a Silver Flora Medal for a choice group, including the beautiful Cymbidium erythrostylum, the fine yellow and white Cypripedium × Troilus, with a fine selection of others, a good example of Vanda Sanderiana, Lælio-cattleya luminosa, and others, a fine series of Cattleya labiata, including the white variety Princess of Wales, and some good C. × Mantinii. An Award of Merit was given to C. × Mantinii, Fowler's var., a very richly coloured form, having some golden veining in the throat of the lip, with dark maroon in front.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander), sent several fine things, gaining a First-class Certificate for Cattleya × Leda, Westonbirt var. (superba × Dowiana aurea), a very richly coloured hybrid which is described on another page, and Awards of Merit for C. × fulvescens var. delicata, and Cypripedium × nitens, Bull's var., the former having light greenish buff sepals and petals, and the lip yellow veined with purple brown, and suffused with rose on the front lobe. He also sent the richly-coloured Cattleya × Fabia illustris and Cypripedium × Charlesianum virginale.

H. S. Goodson, Esq., Putney (gr. Mr. Day), received a Silver Flora Medal for a fine group, including some good Cattleya labiata, Odontoglossum grande, Cypripediums, &c., the more noteworthy including C. × Maudiæ, C. × Chapmanii superbum, C. × memoria-Moensii, C. × Charles Richman, and C. × Niobe superbum.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent Cattleya × Clarkiæ and C. × Ella, two pretty C. bicolor hybrids, a fine specimen of Angræcum distichum, which gained a Cultural Commendation, Mormodes buccinator and Epidendrum floribundum, the two latter each receiving a Botanical Certificate.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Smith), received a Silver Banksian Medal for a good group, including Cattleya Bowringiana and some of its hybrids, varieties of Cypripedium insigne, C. × Allanianum, C. × conco-tonsum, C. × Unixia, and various others, including some interesting Masdevallias.

Leopold de Rothschild, Esq., Gunnersbury House, Acton (gr. Mr. Hudson), also received a Silver Banksian Medal for a charming group of Vanda cœrulea, Oncidium varicosum, Cattleya Dowiana aurea and Epidendrum vitellinum, arranged with Maidenhair ferns and variegated Panicum.

Mrs. Spicer staged a pretty group of Cypripedium Spicerianum, which gained a Silver Banksian Medal.

Captain J. F. Laycock, Wiseton, Bawtry (gr. Mr. Musk), received a First-class Certificate for Cattleya labiata Captain J. F. Laycock, a

remarkably fine form, having purple-rose sepals and petals, and the front of the lip ruby purple with a pale margin.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), received a First-class Certificate for Cypripedium × Germaine Opoix, Westfield var., a remarkably handsome hybrid which is described on another page.

W. M. Appleton, Esq., Weston-super-mare (gr. Mr. Brooks), received an Award of Merit for Dendrobium Phalænopsis splendens, having bright magenta-rose flowers with a white base to the segments.

Miss E. Willmott, Warley Place, Great Warley (gr. Mr. Gooch), showed Maxillaria nigrescens, with fine dark reddish purple flowers, a Botanical Certificate being awarded.

Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), exhibited a series of Cattleyas, including C. labiata, C. × Fabia, &c.

The Marquis de Wavrin, Somerghem, Belgium (gr. M. de Geest), showed the new Cattleya × Adrienne de Wavrin (maxima × Warscewiczii).

M. Meertens, Mont St. Amand, Ghent, staged a small group of hybrids.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a remarkably fine group, consisting largely of hybrids, and containing a series of Brasso-cattleyas, two batches of the handsome Lælio-cattleya luminosa and Cattleya × Fernand Denis, three white forms of C. labiata, Odontoglossum crispum La France, a well-shaped, prettily spotted variety, a very beautiful O. × Phœbe with a spike of fifteen flowers, the rare Bulbophyllum Reinwardtii, a number of choice Cypripediums, species and hybrids, and other interesting Orchids, a Silver-gilt Flora Medal being awarded.

Messrs. Sander and Sons, St. Albans, received a Silver Flora Medal for a very fine group, containing, in the centre, a noble specimen of Cymbidium Tracyanum with five racemes, to which a Cultural Commendation was given, a beautiful series of Cattleya labiata, white and coloured, C. × Lord Rothschild var. alba, C. × Fabia The Queen, and various other hybrids, a fine specimen of Cycnoches peruvianum, and a good selection of Cypripediums. An Award of Merit was given to Lælio-cattleya Golden Beauty (L.-c. Ernesti × L.-c. Henry Greenwood), a fine hybrid having clear yellow flowers with a ruby blotch on the lip.

Messrs. J. W. Moore & Co., Ltd., Rawdon, Leeds, received a Silver Banksian Medal for a fine group, containing, in the centre, a fine specimen of Vanda cœrulea, with numerous spikes, Cymbidium Tracyanum, Aërides Lawrenceæ, Stanhopea eburnea, Bulbophyllum Dearei, Masdevallia Davisii, M. gemmata, and good forms of Cypripedium × Euryades, together with interesting hybrids between C. × œnanthum superbum and C. × vexillarium, and between C. tonsum and C. Godefroyæ. An Award of Merit was given to Cattleya × Marstersoniæ superba (Loddigesii × labiata), a fine form having rosy lilac flowers with a darker lip.

Messrs. McBean, Cooksbridge, received a Cultural Commendation for a remarkably fine specimen of Cattleya Bowringiana.

Messrs. Edgar & Co., South Woodford, sent a small group of Cypripediums and others.

Messrs. Hugh Low & Co., Enfield, staged a small group of Cattleya labiata, the variety King of Greece being white tinged with blush on the lip, also a pretty white form of Dendrobium Phalænopsis, Cypripedium × Milo Westonbirt var., and other good things.

Messrs. Stanley & Co., Southgate, also sent a pretty group, containing the rare Odontoglossum × Duvivierianum, Cattleya Dowiana aurea, some good C. labiata, C. × F. W. Wigan, C. × Fabia alba, and others.

DIPLOMA AWARDS.

The subjects of the special competition were Dendrobium Phalænopsis, Cattleya labiata and Sophronitis grandiflora, with their respective hybrids, and the following awards were made:—

DENDROBIUM PHALÆNOPSIS.—1st Diploma to D. Phalænopsis Miss Louisa Deane, from G. F. Moore, Esq.

CATTLEYA LABIATA.—1st Diploma to C. labiata Capt. J. F. Laycock, from Capt. Laycock; 2nd Diploma to C. l. Hector, from J. Bradshaw, Esq.

C. LABIATA HYBRIDS.—1st Diploma to C. × Fabia Bradshawiana, from J. Bradshaw, Esq.; 2nd Diploma to C. × Fabia Fowler's var., from J. Gurney Fowler, Esq.

SOPHRONITIS GRANDIFLORA HYBRIDS.—1st Diploma to Sophrocattleya eximia, from J. Gurney Fowler, Esq.

Some showy Cattleyas and other Orchids were included in a fine group of stove plants exhibited by Messrs. James Veitch and Sons, Chelsea, to which a Gold Medal was awarded by the Floral Committee.

The report of the Scientific Committee meeting of this date contains the following :—

Botanical Certificate.—An inflorescence of the Orchid, Bonatea Ugandæ, Rolfe, was shown by Mr. Brown, of Haverfield Gardens, Kew. It is a newly-introduced species from Uganda, in the way of B. speciosa. On the motion of Mr. C. T. Druery, seconded by Mr. Bennett-Poe, it was unanimously awarded a Botanical Certificate.

At the meeting held on November 20th there was a fine display of Orchids, and the awards consisted of four Medals, two First-class Certificates, and two Awards of Merit.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day), received a First-class Certificate for Cattleya × Fabia Goodsoni, a richly coloured form bearing two fine spikes of five and four flowers, the sepals and petals being

bright magenta-rose, and the lip rich crimson, with yellow veining in the throat. He also sent Cypripedium × Fairlawn (× œnanthum superbum × nitens G. S. Ball's var.), a well shaped and richly coloured flower, and C. × Miss Annie Goodson (ciliolare × Charlesworthii), a pretty flower, fairly intermediate in character.

The Rev. J. C. B. Fletcher, Mundham Vicarage, Chichester, received an Award of Merit for Cypripedium × Stephanos (× Pollettianum × œnanthum superbum), a handsome thing, having the dorsal sepal white, with feathered purple lines and a green base, and the petals and lip yellow, heavily suffused with purple brown.

G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), received an Award of Merit for Cypripedium × Leeanum Corona, a very fine form, having a white dorsal sepal with a yellowish green base and some purple lines, and the petals and lip yellow tinged with purple. He also sent the pretty C. × Nandii, having the flowers white, closely dotted with rose.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), sent Lælia-cattleya × Mrs. W. J. Dickson (C. Gaskelliana × L.-c. Wellsiana), a handsome thing having light blush sepals and petals, and the front of the lip ruby purple, Cypripedium × Arthurianum giganteum, C. × Germaine Opoix Westfield var. and C. × Baron Schröder punctatum, the two latter handsome forms securing Diploma awards.

W. M. Appleton, Esq., Weston-super-Mare, sent Cypripedium × Elsie (Charlesworthii × villosum), C. insigne Appletonianum, a finely shaped and richly-coloured form, and a good form of C. Fairrieanum with a broad dorsal sepal.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whitelegge), showed Odontoglossum × amabile Charlesworthii, a fine form having the flowers suffused with rose-pink, and spotted with red-brown on the lower part of the segments.

J. Gurney Fowler, Esq., S. Woodford (gr. Mr. Davis), sent the fine Cypripedium × Madame Jules Hye, C. insigne glebelandense, a finely-spotted form, and C. i. Davisii, a yellowish form with lines of brown spots on the lower half of the dorsal sepal.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), showed Cattleya × fulvescens superba and C. labiata Amesiana, the latter bearing a fine inflorescence of five flowers.

The Hon. Walter Rothschild, M.P., Tring Park (gr. Mr. Dye), sent Cattleya × Germania inversa, having cream white flowers tinged with rose, and the front of the lip rich purple crimson.

Leopold de Rothschild, Esq., Gunnersbury House, Acton (gr. Mr. Hudson), sent Vanda cœrulea albescens.

Mr. H. T. Wright sent from the Society's Gardens, at Wisley, four forms of Cypripedium × Euryades.

Messrs. Charlesworth and Co., Heaton, Bradford, staged a very brilliant group, consisting principally of hybrids, to which a Silver-gilt Flora Medal was given. It contained a beautiful series of Lælio-cattleya luminosa and various other handsome Lælio-cattleyas, some fine Cattleya × Fabia with eight and nine flowers each, C. labiata Mrs. J. Bradshaw, and C. l. reedleyensis, two beautiful white forms, Odontoglossum × amabile; Trichopilia suavis, Oncidium cheirophorum, Miltonia × Bleuana, Cypripedium × Baron Schröder, and numerous other fine things.

Messrs. James Cypher and Sons, Cheltenham, also received a Silver-gilt Flora Medal for a very fine group, consisting largely of Cypripedes, with examples of Dendrobium Phalænopsis, Oncidium ornithorhynchum, Lælio-cattleya × Clive, and a few others, and the Cypripediums included half a dozen C. Fairrieanum, C. × memoria-Moensii, numerous well-known forms of C. insigne, and a fine series of hybrids.

Messrs. Sander and Sons, St. Albans, received a Silver Flora Medal for a fine group, including Cattleya × Hardyana picturata, Lælio-cattleya × luminosa, L.-c. × exoniensis cœrulea, with a slaty blue blotch on the front of the lip, Miltonia × Bleuana, Cypripedium × Hitchinsiæ, some fine C. insigne, and various others. One magnificent Cypripedium was supposed to be a form of C. × Rolfei, but the Orchid Committee decided that it was different, and voted it a First-class Certificate under the name C. × F. K. Sander var. King Haakon. This award was not confirmed by the Council on the ground that it was too similar to the original form, derived from C. × Annie Measures and C. bellatulum.

Messrs. Hugh Low and Co., Enfield, received a Bronze Banksian Medal for a small group, including three pretty white forms of Cattleya labiata, Amesiana, Gilmouriæ, and reedleyensis, a good Cypripedium Fairrieanum, a beautiful example of C. × Niobe with nine flowers, C. × Arthurianum with seven, and others.

Messrs. J. W. Moore, Ltd., Rawdon, Leeds, staged a nice little group, including a good Lælio-cattleya Statteriana, Cattleya × Clarkiæ, Brassavola nodosa, Cypripedium × Watsonianum, C. × Milo, C. insigne Harefield Hall var., in fine condition, and others.

M. Ch. Maron, Brunoy, France, sent Cattleya × Fabia alba, and a pretty white C. labiata with a tinge of pink on the lip.

M. Meertens, Mont-St.-Amand, Ghent, sent a small group, including Cattleya labiata alba, a second form with a purple blotch on the front of the lip, and several interesting Cypripediums.

Messrs. Edgar & Co., Montrose, South Woodford, sent a small group of interesting Cypripedes.

DIPLOMA AWARDS.

The subjects of the special competition were Cypripedium Fairrieanum and its hybrids, and the following awards were made :—

CYPRIPEDIUM FAIRRIEANUM.—First Diploma to C. Fairrieanum dark var., from Messrs. Sander & Sons.

C. FAIRRIEANUM HYBRIDS.—First Diploma to C. × Germaine Opoix Westfield var.; Second Diploma to C. × Baron Schröder punctatum, both from Francis Wellesley, Esq.

The Scientific Committee on this date had several Orchids before it :—

BONATEA UGANDÆ (Rolfe).—This Orchid, to which at the last meeting a Botanical Certificate was recommended, was commented upon by Dr. Masters, who drew attention to the remarkable form and size of the rostellum, the length of the caudicles of the pollinia, which fitted into long

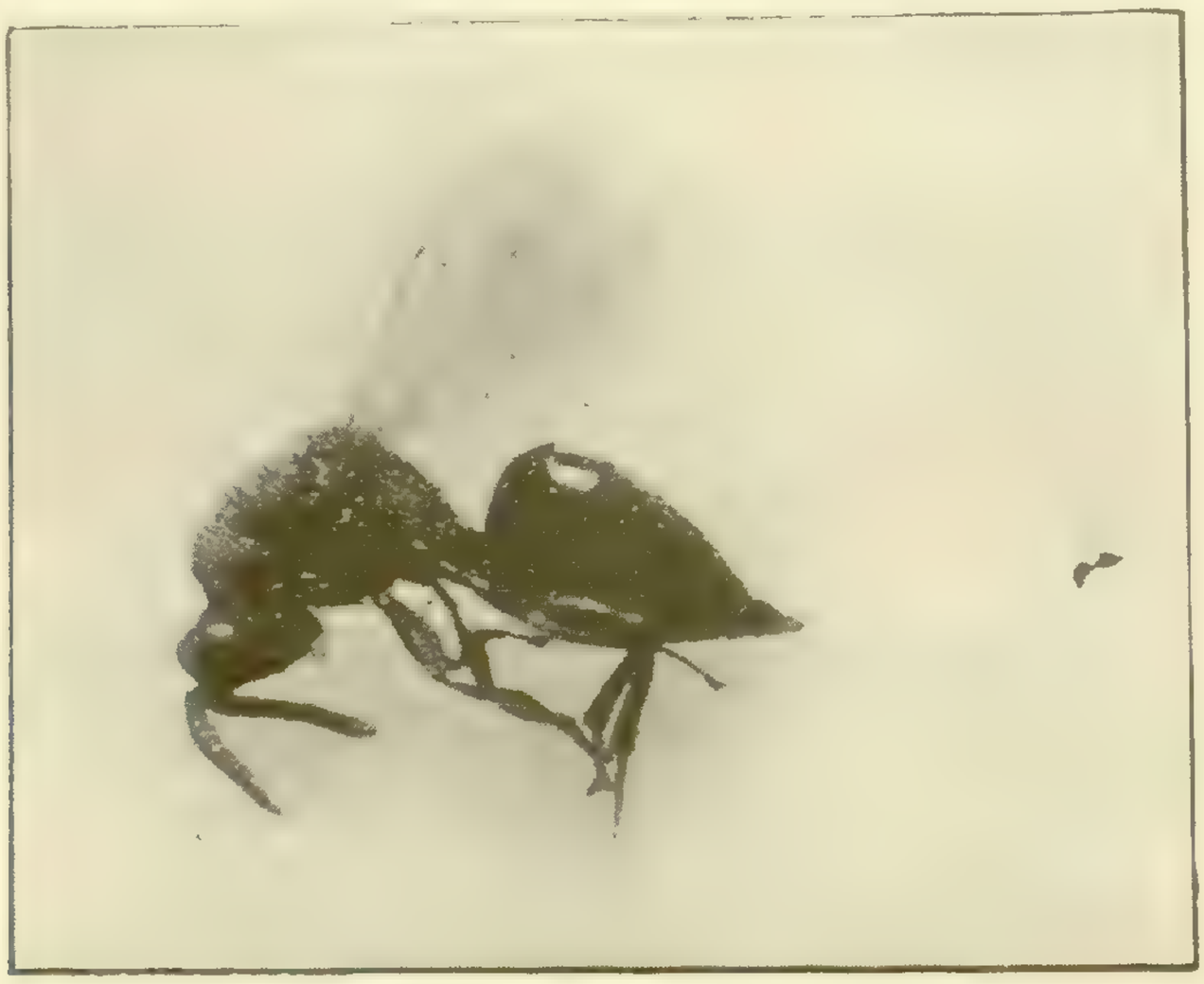

Fig. 47. THE CATTLEYA FLY (*nat. size and magnified*).

tubes at the sides of the rostellum, and the length of the spur, which reached to between 5 and 6 inches long.

UNCOMMON ORCHIDS.—A species of Pleurothallis from R. I. Measures, Esq., and Oncidium Waluewa, Rolfe (Waluewa pulchella, Regel), from H. T. Pitt, Esq., of Stamford Hill, were shown at this meeting. Mr. Rolfe undertook to report on the former at the next meeting.

CATTLEYA FLY.—Mr. Bowles showed pseudobulbs of newly-imported Cattleyas, which were badly infested with the larvæ of the Cattleya fly, Isosoma sp., a pest too well known on Cattleyas. Mr. Bennett-Poë suggested that the only way of dealing with the trouble is to collect the affected pseudobulbs, which turn black, and burn them. [Fig 47 is a photomicrograph of this insect, the small figure on the right showing it natural size, the wings in this case being invisible.—ED.].

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of this Society was held at the Coal Exchange, Manchester, on October 25th, when some interesting Orchids were staged, and the awards included two medals, two First-class Certificates, and six Awards of Merit. The following members of the Committee were present:—E. Ashworth, Esq., Chairman, and Messrs. R. Ashworth, Ritchie, Leemann, Thorp, Cowan, Stevens, Rogers, Ashton, Parker, Cypher, Williamson, Warburton, Upjohn, Smith, and P. Weathers, Hon. Sec.

W. Thompson, Esq., Stone (gr. Mr. Stevens), received Awards of Merit for Odontoglossum × Elinor (Harryano-crispum × crispum), and Cypripedium × optimum, a hybrid of unrecorded parentage, being also accorded a Vote of Thanks for a group of other interesting things.

H. J. Bromilow, Esq., Rainhill (gr. Mr. Morgan), exhibited, among others, Cypripedium × Editha and C. × fulshawense, the latter receiving an Award of Merit, while a Vote of Thanks was accorded to the group.

Philip Smith, Esq., Ashton-on-Mersey, was accorded a Vote of Thanks for an interesting group, including "Cattleya × inversa Haddon Hall var.," and a seedling apparently derived from Lælia Perrinii and L. pumila.

Messrs. James Cypher and Sons, Cheltenham, staged a very fine group of Orchids, which gained a Silver-gilt Medal. Cattleya × Hardyana illuminata also received a First-class Certificate, and Miltonia vexillaria Leopoldi superba an Award of Merit.

Messrs. Hugh Low and Co., Enfield, received a first-class Certificate for a remarkably fine hybrid Cypripedium, derived from C. insigne Harefield Hall var., and C. × nitens magnificum Ball's var., and an Award of Merit for C. Charlesworthii × nitens.

Messrs. A. J. Keeling and Sons, Bradford, received a Bronze Medal for a small group of Cypripediums.

Votes of Thanks were accorded to O. O. Wrigley, Esq., Bury, Mr. S. Allen, Sale, and Mr. D. McLeod, Chorlton-cum-Hardy, for interesting exhibits.

At the meeting held on November 16th there was a very fine display, and the awards consisted of five Medals, three First-class Certificates, two Awards of Merit, and one Botanical Certificate.

The members of the Committee present were:—E. Ashworth, Esq., Chairman, R. Ashworth, Leemann, Parker, Warburton, Smith, Ashton, Cowan, Rogers, Sander, Stevens, Thorp, Williamson, and Weathers (Hon. Sec.).

G. W. Jessop, Esq., Rawdon, near Leeds, received a Silver Medal for a good group, and a Botanical Certificate for Cirrhopetalum Medusæ.

H. J. Bromilow, Esq., Rainhill, W. Laverton, Esq., Nantwich, and W. Thompson, Esq., Stone, each received a Silver Medal for a good group.

A. Warburton, Esq., Haslingden (gr. Mr. Dalgleish), received First-class Certificates for Lælia-cattleya Decia and Cypripedium × Germaine Opoix.

S. Gratrix, Esq., Whalley Range (gr. Mr. Cypher), received a First-class Certificate for Cattleya × Hardyana alba Gratrix's var., and an Award of Merit for Cypripedium × Leoniæ Gratrix's var.

W. Farrer, Esq., Carnforth (gr. Mr. Proudlock), exhibited Cypripedium × Chapmanii magnificum and C. × leyburnense.

E. Rogerson, Esq., Didsbury (gr. Mr. Price), exhibited Cypripedium × Actæus var.

Messrs. Stanley and Co., Southgate, London, received an Award of Merit for the pretty little Odontoglossum × Duvivierianum, a natural hybrid between O. cordatum and O. apterum. They also sent Cattleya labiata pardina, C. × Fabia alba, and several other good things.

Mr. D. McLeod, Chorlton-cum-Hardy, received a Bronze Medal for an interesting little group.

CALENDAR OF OPERATIONS FOR DECEMBER.

By J. M. BLACK, Streatham.

TEMPERATURES, DAMPING, AND FIRING.—With the closing of the year, vegetation is at its lowest ebb in the Orchid houses. At this season every effort should be made to keep from exciting the plants too much by great fluctuations of temperature, too little water followed at intervals with too much, too dry an atmosphere followed by a too wet one, and all kind of extremes. The temperatures advised last month may be lowered a degree or two during the colder weather of December, and every effort made to keep them steady. The sun does not now get very high, and rises late and sets soon, and many days pass in smoky districts without its ever being seen at all; so that even the day temperatures will nearly entirely depend upon fire heat, and damping will be largely regulated by the amount of fire heat necessary to keep the temperatures at the required degree. During crisp, frosty weather, when the pipes must be kept hot, one may be compelled to damp more frequently than seems reasonable, but rather than have a "steamy" atmosphere, allow the temperatures to drop considerably. I would refer the reader to the January Calendar for further details.

VENTILATION is a work which requires much consideration during the dull and cold season, but only in extremely cold weather, and during fogs, should the bottom ventilators be closed tight, and in the morning when the temperatures are low. The top ventilators can be sparingly used during mild weather. The atmosphere should never feel oppressive or stifling—no matter in which house.

FOGS.—Fogs are a very real evil in London, and, although we have spells of good weather during the winter, we never pass the dull season without several visitations. I have seen it recommended to keep the plants on the dry side, and the temperatures lower than usual during spells of fog, and I dare say this is all one can do, after shutting the houses up close. But one is frequently caught napping at night. I have gone to bed when the air was beautiful and clear, and found the houses full of fog in the morning. The effect that a London fog has on vegetation is well-known. Flowers wither up as if they had been held in an oven, buds are arrested and yellow off, and also tender foliage. To show these effects the fog does not require to be very dense, or of long duration. But while these happenings are apparent, how much is there done that is not apparent? Plants with thick foliage, such as Cattleyas, may give no great and visible indication of mischief, such as turning yellow, but the damage must be there none the less, if more subtle. The sterilizing influences of the sulphurous gases contained in the fog—if able to turn the foliage of some plants yellow, and blast both flowers and buds—must play an enormous amount of unseen and unrecorded havoc. One fog a year is sufficient to stunt plants that are growing, and so stun those that are at rest that they have not that fierce impulse to start when their period of quickening arrives. There are fogs on sea and land, but these have nothing in common with the London fogs, excepting in moisture, and they are always quite harmless, and very frequently most beneficial to vegetation. Evergreen epiphytal Orchids are the plants to feel most—or give most evidence of—the debilitating effects of this destructive scourge, but, as I have no remedy to suggest, to enter further into the question will be waste of time.

Cattleya Trianæ, C. Percivaliana, &c., may be showing their buds at the base of the sheaf, but how to treat these plants when in flower and bud was discussed at some length in the February Calendar.

There are a good many winter flowering Orchids, and these should be placed where they can be seen to the best advantage, and also where they can receive the best possible light when developing their flower spikes. Some of these are Cymbidium Tracyanum, Lycaste Skinneri, Zygopetalum Mackayi, &c.

Now that winter is nearly here, and seeing that I have been putting things nicely to rest for some time past—having, in fact, run myself aground as far as Calendarial matter is concerned—it is fortunate that I recollect the Editor once telling me that I might introduce seasonable hints from time to time. A few things suggest themselves to me which might make profitable reading, and which have the merit of being in season at all times, although, strictly speaking, my year's Calendar ends here.

To begin with: If you are perfectly satisfied that you ought to have a First-class Certificate and your friends aid and abet you in this belief, do not be down-hearted or lose your temper if you do not get one. It is on record that man is liable to err, and Orchid Committees are subject to the same frailty. There is not the slightest doubt but that your judgment, supported by that of your friends, is quite unimpeachable. In an extremity of this kind, you may find some solace in endeavouring to instil fortitude into others who are smarting under the same disappointment.

In the course of the year you are sure to have a good many visitors, and, among others, there is sure to drop in, now and then, the individual who, while walking through your houses, talks incessantly of the plants he has at home. If he deigns at all to pass a remark about one of yours, it will be to compare it—unfavourably, of course—to one that he flowered last year, has in bud, or saw, or heard of, or expects to hear of; but he nearly always has it at home. He will jubilate on the immensity of the bulbs *his* plants are making, and when you come to that special feature of yours—upon which you have come to rather pride yourself—he will exclaim, "Ah! you ought to see mine," and then will follow in molecular detail the wonderful treatment by which means only such great attainments can be got. By the time he has finished with you, you will feel limp and courageless, and you will wonder how on earth you ever came to look on your plants as other than the veriest trash. In an affliction of this kind, hasten to repay that man's visit, and have important business a long, long way from home next time he calls.

If a man whispers to you that he has hundreds of thousands of Odontoglossum seedlings, and that they are coming up "all over the place"—in fact, he does not know what he is going to do with them all *eventually*—go and see them, and don't forget to take a magnifying glass with you. You might, if possible, take one with more than one lens, so that it is of considerable power, for fear you may be disappointed.

Sub Rosa.—If the "guv'nor" comes down the garden in the morning with a brand new knife in his hand and a gleam of vivisection in his eye, make sure that he has surgical designs on the plant purchased the day before. Do not be an accessory; rather plead indisposition for the day. You may express an opinion after the *fait accompli*; to do so before would be to take risks too dire to dwell upon.

I know a gentleman who, on purchasing his first valuable plant, took it home and washed the roots with genuine thoroughness under the cold water tap. This is a perfectly authentic story, and the plant was Cœlogyne cristata alba, bought for twenty guineas at a time when it had that value. Do not be so meticulous over cleanliness as this. The sequel to the above story is a painful one: that plant promptly died.

If you are a town grower, and the "guv'nor" happens to be a native, do not complain to him about the fog or smoke. He will take it personally.

Do not attribute all calamities which may befall the collection during the year to the fortnight you were away on your holiday.

Have as good an opinion of your Orchids—and, incidently, yourself—in the future as you have consistently had in the past, but do not expect other people to share that opinion in just the same degree.

An explanation which is half an apology.—A few words of a personal nature may be excused me at the end of the year, for my last appearance as Calendar writer. I confess that I commenced the year choke full of ideas, which were to be trumpeted forth to that world circumscribed by the circulation of the *Orchid Review*, but by the time these ideas began to take shape on paper, I discovered, much to my despair, that pretty well all that I had to say about growing Orchids—and some more—had already been said, more than once, and very well said, too. I have never been able to recover completely during the year, being at every step reminded of it, and the strenuous, if ineffectual, efforts which I have made to steer clear of the beaten path—which is beginning to show signs of hard wear—have made the Calendar of Operations for the year somewhat ungainly, and certainly very incomplete.

[We cannot quite agree with the last remark, and we regret that Mr. Black has used up all his ideas for the present.—ED.]

We have much pleasure in announcing that Mr. W. P. Bound, of Gatton Park, whose success as a grower is well known, will contribute the Calendar of Operations for next year.

ORCHIDS IN THE OPEN AIR DURING SUMMER.

IT is often said that Orchids are tender subjects to deal with, but I do not think that is so. Last year one of my Oncidiums (O. phymatochilum) began to show unsatisfactory signs, so I decided on an experiment. It was taken out of the pot, with the compost adhering to the roots, and tied fast to a branch of a tree in my garden, with no protection save the leaves and branches above. There it remained from the middle of last June till the third week in September, exposed to all the varying kinds of weather that is experienced some seven miles from Manchester, and an atmosphere not by any means ideal. When it was taken down several bulbs were soft. These were taken off the plant, which was then fastened to a teak block and suspended in the Cypripedium house, and to-day—November 21—it is throwing up new growths with all the vigour of a newly-imported piece. Evidently it takes a lot to kill Orchids, but it is possible to drown them with too much water or roast them to death with too much heat. T.

ORCHIDS FROM PENARTH.

THE collection of Orchids grown by J. J. Neale, Esq., Park road, Penarth, is evidently a very representative one, for examples of the followiug are sent by Mr. Haddon. The rare Odontoglossum Londesboroughianum has just produced a spike of eighteen flowers. It is grown close to the roof of the Cool Intermediate House, being suspended near a ventilator which has been open night and day, with hardly any shade, and the plant has been syringed morning and evening on bright days. Calanthe vestita luteo-oculata and rubro-oculata are from a recent importation by Messrs. Sander, a flower of C. × Veitchii being also included. There are three forms of Lælia pumila, with a good dark form of L. Perrinii, and a good Cattleya labiata. Oncidium is represented by the handsome O. tigrinum, O. crispum, O. Forbesii, O. dasytyle, O. excavatum, and O. ornithorhynchum, and Epidendrum by E. ciliare, E. nocturnum, and E. latilabrum. Dendrobium bigibbum, D. Phalænopsis and its dark variety Statterianum, together with Phragmopedilum × Sedeni candidulum and P. × calurum are valuable autumn-flowering plants. Other interesting things are Cochlioda vulcanica, Phalænopsis Esmeralda, Masdevallia peristeria, Zygopetalum pallidum, Platyclinis Cobbiana, Stenoglottis longifolia, Bulbophyllum Careyanum and rufinum, Polystachya laxiflora and Adansoniæ, and Seraphyta multiflora, the latter being one of four sprays produced by this graceful and very floriferous plant.

ORCHIDS IN SEASON.

A FLOWER of the handsome Cattleya × Leda Westonbirt var. (superba × Dowiana aurea), which received a First-class Certificate from the R.H.S. on November 6th last, is sent from the collection of Major G. L. Holford, Westonbirt, Tetbury, by Mr. Alexander. It is most like an enlarged edition of the former in shape, and has bright rose-purple sepals and petals, and an intense purple-crimson lip, with some yellow veining in the throat.

A flower of a handsome seedling Lælio-cattleya is sent from the collection of F. M. Burton, Esq., Highfield, Gainsborough, which we believe to be L.-c. Nysa. The Lælia crispa influence is unmistakeable, and we believe that Cattleya Warscewiczii was the other parent. It was purchased some years ago as a small seedling.

Four interesting flowers are sent from the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, by Mr. Smith. One is a handsome hybrid Cattleya which was purchased about a year ago as C. Harrisoniana × Hardyana, but the flower agrees so closely with C. × Mrs. Pitt, that we suspect the second parent may have been C. Dowiana aurea. Paphiopedilum × Olenus and P. × Charles Richman superbum are two well-

known and handsome hybrids, and the remaining one is a hybrid from P. concolor × tonsum, and has the specific name "conco-tonsum." It is fairly intermediate in size and shape, and the colour is light yellow with many small brown dots.

A flower of Lælio-cattleya Perrilosa (L. Perrinii × C. granulosa) is sent from the collection of the Right Hon. J. Chamberlain, M.P., by Mr. Mackay. The sepals and petals are purple, and most like the Lælia parent in texture, but the lip is like the Cattleya in shape, having deeply cut side lobes, whitish in colour, with a deep purple stalked front lobe. A second hybrid was obtained with the record Lælia pumila × Cattleya maxima, but the first mentioned must be a slip for L. Perrinii, which was clearly one parent. The other may be correct, as the flowers looks like a small Lælio-cattleya Statteriana, in shape and colour.

THE LATE G. W. LAW-SCHOFIELD: A MEMORIAL CROSS.

(See *Frontispiece*).

IN our Obituary notice of the late G. W. Law-Schofield (p. 314) it was mentioned that a beautiful floral cross was sent by the members of the Manchester and North of England Orchid Society, made of Orchid flowers from their own collections. A photograph has been sent to us by the Chairman, E. Ashworth, Esq., on behalf of the Committee, with he request that it should be reproduced as the frontispiece to the present volume. The cross was over six feet high, and the photograph over ten inches, and in order to avoid much further reduction of detail we have omitted two inches from the base. As the flowers are only about an-eighth natural size it is not easy to make them out in the figure, though in the photograph we can trace sprays of Odontoglossum, Dendrobium Phalænopsis, Oncidium, Cattleya, Lælio-cattleya, Brasso-cattleya, Calanthe veratrifolia, and several Cypripedes. The original must have been very beautiful. It was made up by Mr. Mason, Florist, Victoria Street, Manchester.

NOTES.

THE next meeting of the R.H.S., the last of the year, will be held at the Royal Horticultural Hall, Vincent Square, Westminster, on December 11th, when the Orchid Committee will meet at the usual hour, 12 o'clock noon.

The subjects of the special Diploma competition on this date—which completes the series—will be Cypripedium Spicerianum and C. insigne with their hybrids, together with Calanthe and hybrids.

The Manchester and North of England Orchid Society will hold a meeting at the Corn Exchange, Manchester, on December 13th. The Committee meets at noon, and the exhibits are open to inspection from 1 to 3 o'clock p.m.

A twin-flowered scape of Paphiopedilum Charlesworthii is sent from the collection of H. Gurney Aggs, Esq., Pippbrook, Dorking. The character is occasionally seen in strong, well-grown plants.

THE ORCHID STUD-BOOK.—The additions up to the end of 1906 are being arranged, and will appear as a supplement to the volume. This course seems desirable, as the preparation and printing of the work have taken longer than we anticipated.

ORCHID PORTRAITS.

CATTLEYA DOWIANA AUREA VAR. MRS. F. HARDY.—*Journ. Hort.* 1906, ii. 407, with fig.

CATTLEYA × J. W. WHITELEY, ROSSLYN VAR.—*Journ. Hort.* 1906, ii. 451, with fig.

CYPRIPEDIUM FAIRRIEANUM.— *Rev. Hort.* 1906, p. 497, fig. 190.

CYPRIPEDIUM × GERMAINE OPOIX WESTFIELD VAR.—*Gard. Mag.* 1906, p. 766, with fig.; *Journ. Hort.* 1906, ii. p. 473, with fig.

CYPRIPEDIUM × PRIAM.—*Journ. Hort.* 1906, ii. p. 497, with fig.

CYPRIPEDIUM × VIDOR.—*Journ. Hort.* 1906, ii. p. 429, with fig.

LÆLIO-CATTLEYA BLETCHLEYENSIS.—*Gartenfl.* 1906, p. 505, t. 1555.

LYCASTE DYERIANA, Sander.—*Bot. Mag.* t. 8103.

PLEIONE YUNNANENSIS, Rolfe.—*Bot. Mag.* t. 8106; *Gard. Mag.* 1906, p. 781, with fig.

STANHOPEA WARDII.—*Rev. Hort. Belge*, 1906, p. 236, fig. 53.

ANSWERS TO CORRESPONDENTS.

[*Orchids are named and questions answered here as far as possible. Correspondents are requested to give the native country or parentage of plants sent. An* ADDRESSED *postcard must be sent if a reply by post is desired* (*abroad, reply postcards should be used*). *Subjects of special interest will be dealt with in the body of the work*].

H.G.A. Twin-flowered scapes on Cypripedes which are normally one-flowered is believed to be due to good culture, and consequent strength on the part of the plant. It has been observed and noted in many species and hyrbids.

E. It would appear that the Cattleya fly is always liable to be re-introduced with imported Cattleya labiata, and all newly imported plants should be examined, and swollen and deformed parts cut away.

J.G., and several others. Owing to pressure on our space through the annual Index several notes are crowded out till next month.

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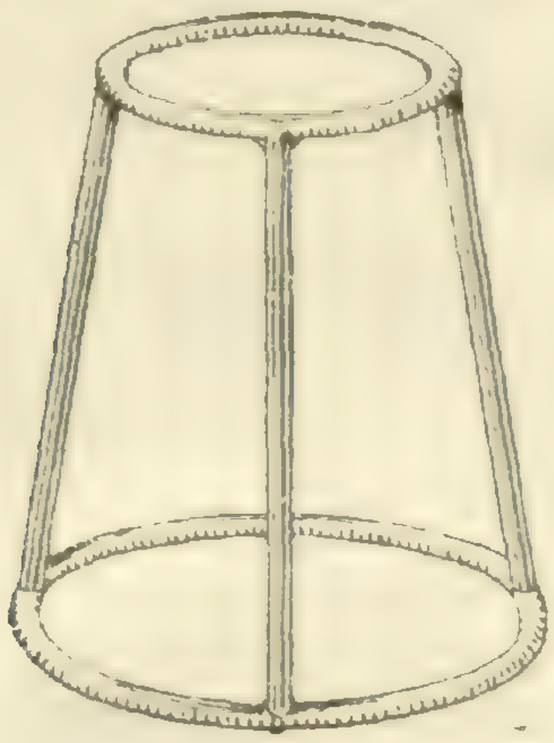

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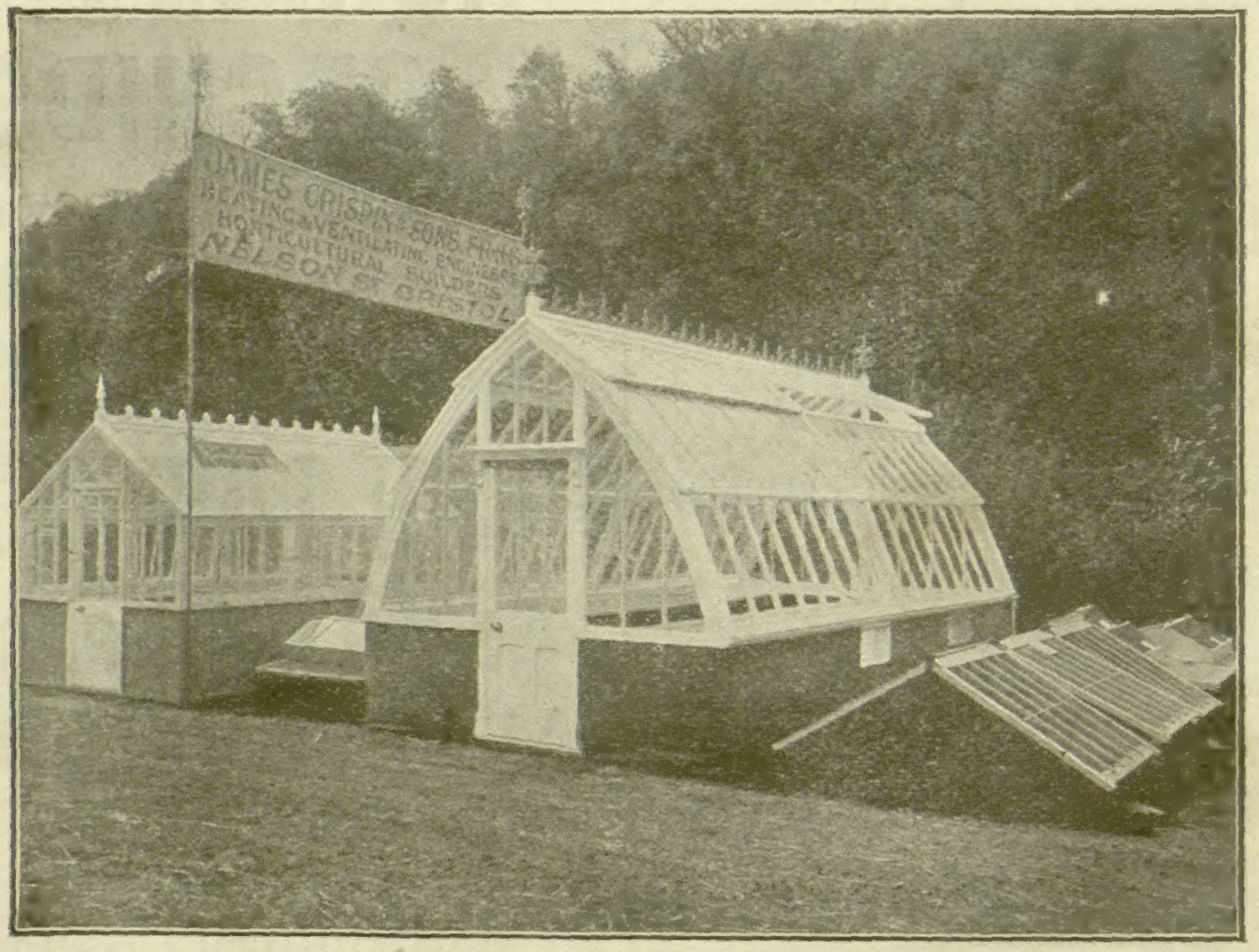

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